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ABSTRACT

Intended for use in courses in information resources at Kuring-gai College of Advanced Education, this guide approaches information resources by subject, building on previous information resources courses which concentrated on format. Resources for selected disciplines within the broad subject areas of the humanities, the social sciences, and pure and applied sciences are examined. The disciplines covered--literature, fine arts, law, history, education, chemistry, biological sciences, medicine, and engineering--were selected because they illustrate both different information use patterns and a variety of different types of information resources. The segment for each discipline examines briefly the nature of the subject and the way in which information is generated and communicated in that subject, in order to provide a background and setting for the identification, evaluation, and use of its information resources. Study questions and exercises are included for each section. The guide concentrates on Australian information resources, but also includes material produced in other countries that is relevant to the Australian situation. (Author/THC)

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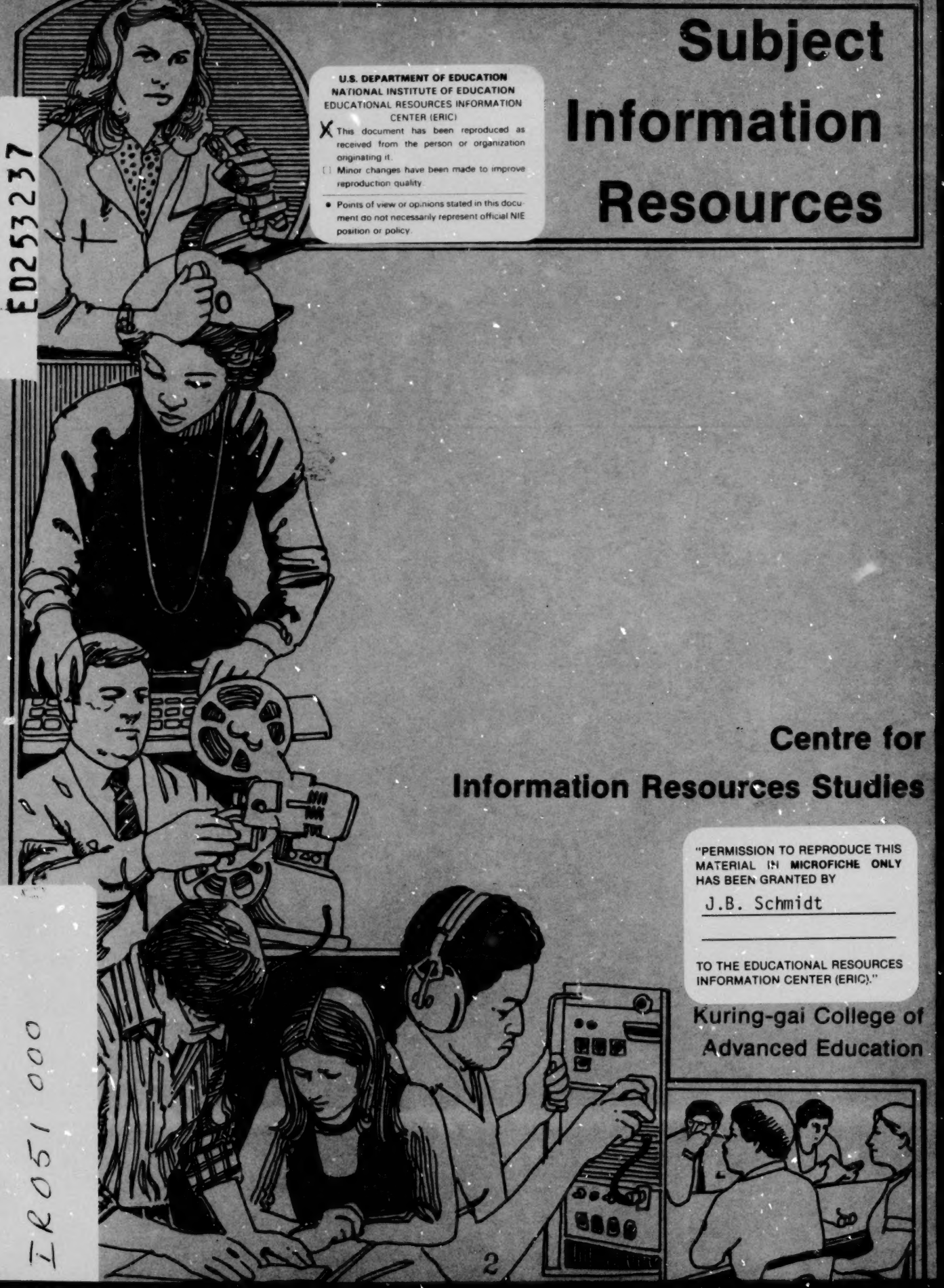

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Kuring-gai College of Advanced Education

IR051 000

SUBJECT INFORMATION RESOURCES:

a guide to information resources in selected subject areas of the humanities, the social sciences and pure and applied sciences.

Edited by Janine Schmidt
Revised by Janine Schmidt and Sue Burgess

Material in this guide has been prepared by staff of the Department of Information Studies; Janine Schmidt, Barbara Anderson, Sue Burgess, Ida Vincent and Lesley Ljungdahl assisted by library practitioners, Margaret Bettison, Rhonda Langford, Jack Moulos and Phin Tjhai

Lindfield, N.S.W.,
Kuring-gai College of Advanced Education,
Centre for Information Resources Studies, 1983

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PREFACE

The material in this guide is intended for use in the units 41313, Information Resources IIIA, and 41215, Information Resources IIIB as taught at Kuring-gai College of Advanced Education. These units approach information resources by subject, building on previous information resources units which concentrated on format. The resources of selected disciplines within the broad subject areas of the humanities, the social sciences and pure and applied sciences are examined. The disciplines included: literature, fine arts, law, history, education, chemistry, biological sciences, medicine and engineering, have been selected because they illustrate different information use patterns, and a variety of different types of information resource. Each segment examines briefly the nature of the subject, and the way in which information is generated and communicated in the subject, in order to provide a background and setting for the identification, evaluation and use of information resources relevant to the subject. It concentrates on Australian information resources, but also includes material produced in other countries which is relevant to the Australian situation. The resources listed are examples, and do not comprise a definitive list. Some have been included because they are standard works, others because they are representative of a particular type of information resource. For resources listed, call numbers at the K.C.A.E. Resource's Centre are indicated.

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Department of Information Studies

I. LITERATURE

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1. OBJECTIVES OF THIS SEGMENT

When you have completed this segment of the course, you should have thought about, and begun to draw some conclusions about, questions such as these:

i. What is it about literature which distinguishes it from other subjects which people may engage in for research, study, pleasure or profit?

ii. For what purposes, and at what levels, may people be engaged with literature and its information resources? What is the significance of these differences in level and purpose for people like librarians who provide the information resources?

iii. What are some of the characteristics of the people who are in various ways engaged with literature? How do they seek information? How do they use it?

iv. What are some of the major characteristics of the types of information resource used by people who are engaged with literature?

You should also have acquired certain skills, in particular:

i. Describe the main types of information resource used in literature, their characteristics, and what they can be used for.

ii. Select appropriate information resources to answer specific questions in literature.

iii. Use representative information resources to answer questions in literature effectively.

iv. Evaluate the answers found.

2. LITERATURE: WHAT IS IT?

2.i. Definitions of literature

Literature can be defined as the whole body of writings belonging to a given language or people, specifically that part which is noted for literary form and expression, and imaginative content, as distinguished from technical and journalistic writing. More particularly it may be defined as those creative writings of a country or period which have permanent value on account of their beauty of expression and form, and universality of emotional and intellectual content.

This segment deals with literature at a variety of levels - not only as an academic discipline or as a subject of study, but also as a hobby or leisure pursuit, as a way of earning a living, and as a mode of creative expression.

The following are some attempts to define literature:

'Primarily an imaginative art form... literature's main function (is) to transport the reader into a world of the imagination which illuminates the inner life of love, hope, fear, hatred, envy' (George Chandler)

'1. Written works which deal with themes of permanent and universal interest, characterized by creativeness and grace of expression, as poetry, fiction, essays etc.: distinguished from works of scientific, technical or journalistic nature; belles-lettres. 2. The writings that pertain to a particular epoch, country, language, subject or branch of learning.'
(Funk and Wagnalls Standard Dictionary)

'One of the great creative and universal means of communicating the emotional, spiritual or intellectual concerns of mankind. Fine literature is characterized by imagination, meaningfulness of expression, and good form and technique.' (Encyclopedia Americana)

'Writings whose value lies in the beauty of form or emotional effect' (Concise Oxford Dictionary)

'The organization of words to give pleasure; through them it elevates and transforms experience; through them it functions in society as a continuing symbolic criticism of values' (Encyclopaedia Britannica)

'Exists to please - to lighten the burden of men's lives; to make them for a short while forget their sorrows and their sins... their disappointed hopes, their grim futures'
(Augustine Birrell)

'The art of writing something that will be read twice'
(Cyril Connolly)

'Literature and fiction are two entirely different things: literature is a luxury; fiction is a necessity'
(G.K. Chesterton)

'Great Literature is simply language charged with meaning to the utmost possible degree' (Ezra Pound)

2.ii. Consumers and generators of literature

Literature is different things for different people. For many it is a source of pleasure: in reading they seek recreation, relaxation, imaginative stimulation, alleviation of boredom or anxiety, escapism, self-discovery. For others literature is a subject for academic study and research: they include school and university students, academics, literary critics and historians, as well as those who study for fun.

Libraries have always been closely identified with the provision of information resources for both these categories of user. The library is the storehouse for all literature. Because libraries are so closely related to literature the concept of Public Lending Right has become important.

Public Lending Right means the right of a book's creator to receive compensatory payment when that book is available in public lending libraries.

Public Lending Right was introduced in 1974 in Australia and annual programs began in 1975/76. Since October 1980, the Public Lending Right Scheme has been a unit of the Department of Home Affairs and Environment. A Committee appointed by the Minister reviews the policy and operations of the Scheme.

Payments to authors and publishers are based on annual surveys of bookstocks in public lending libraries. They are not based on borrowings. Each year, about 70 libraries are selected by the Australian Bureau of Statistics to complete a Checklist of Titles. The selected library systems cover about half the bookstock held in public lending libraries in Australia. At the present time, libraries of educational institutions are not included in the survey. The checklist is used to record the numbers of copies held of books registered in the Scheme. The data collected is then consolidated and used to produce estimates of holdings Australia-wide. Where at least 50 copies are estimated to be held in libraries, a payment is made. Payment is made at the rate of 60 cents to authors and 15 cents to publishers per estimated copy.

It should be noted that Public Lending Right applies to all subject areas but appears to be most important in literature.

Additionally, libraries may be involved with producers of literature, those who write as a vocation or as a means of earning a living. For them the library may be a laboratory.

2.iii. Categorising literature

(a) Language

A distinction is often made between English literature and literature in foreign languages. (Much literature in English is in fact translated from foreign languages.) In this course we shall concentrate on literature in the

English language, but you should remember that resources similar to the ones we examine exist for other languages also. In a multi-cultural society like Australia's, foreign literature resources may be as important in the public library as they are in university libraries.

(b) Level

Literature may be categorized according to the age or reading ability of the target audience. For example

Children's literature
Literature for young adults
Literature for those with reading difficulties or the newly literate

These are specialized areas which are not dealt with in detail in this course.

(c) Purpose

Literature may be categorized according to the purpose for which it will be used. For example

Texts for those learning a foreign language
Escape literature

(d) Form

It is conventional to divide literature into three basic forms - prose, poetry and drama. Poetry and drama are the older forms, having their origins in religious ceremonials and the oral transmission of culture. Written poetry and prose date back to the fifth century B.C. in Greece, and to the Anglo-Saxon period in England. Prose literature is particularly associated with fiction and the novel, which developed in their modern form in the eighteenth and nineteenth centuries.

(e) Genre

Literature may also be classified according to genres, movements or schools. These may include literature written in more than one of the three forms mentioned above. They may also include the literature of more than one country or language. Some examples are

romantic movement, neo-classical movement
renaissance, restoration, Elizabethan literature
religious poetry, religious drama
lyric, epic, satirical, narrative poetry
tragedy, comedy, commedia dell'arte, kitchen sink drama
'stream of consciousness' novels, gothic novels
fantasy, didacticism, realism
westerns, detective stories, science fiction

3. GENERAL INFORMATION RESOURCES IN LITERATURE AND THEIR USE

Information resources in literature exhibit many of the characteristics of information resources in the humanities generally: for example they do not go out of date or become superseded, like much scientific writing, and they are usually written in expressive, rather than technical language. Much literary criticism is subjective: there are no 'right' answers. (However in some areas of literary criticism, such as the study of textual problems, or historical studies, factual accuracy and objectivity are essential.)

A particular characteristic of information resources in literature is that actual texts of literary works are at least as important as works about literature. For the lay person texts are literature; for the student or academic they are his raw material.

3.i. Overview of the subject

If you know nothing about the information resources in a particular area, 'guides to the literature' may be the best place to start. You are probably familiar with 'guides to the literature' which cover all subjects, like Walford and Sheehy. There are also specialized ones for particular subject areas. Some examples for literature are:

CHANDLER, G. How to find out about literature. Oxford, Pergamon Press, 1968.	011.02 CHA 1
LOCK, F. and LAWSON, A. Australian literature: a reference guide. 2nd ed. Melbourne, O.U.P., 1980.	R016.829 LOC 1 1980
PATTERSON, M.C. Literary research guide. Detroit, Gale, 1976.	R016.0168 PATT

'Guides to the literature' can be used for various purposes, depending on whom they are written for, and how they are arranged. A guide to the literature may contain any of the following:

(1) give an introduction to, overview or explanation of the subject

(2) give guidance on how to study or do research in the subject

(3) a bibliography on the subject listing titles of information resources available

(4) an indication of the types of information resources used in the subject

(5) annotations and evaluations of specific information resources and sometimes guidance in their use.

'Guides to the literature' are intended to be used by students who wish to know what resources are available and how to use them. They are used extensively by librarians for

(a) selection and collection building

(b) background for handling an information query

(c) identification of relevant information resources.

3.ii. Brief factual information

Handbooks and companions to literature can be used to answer a variety of questions relating to authors, literary works, characters, plots, literary themes and allusions, and so on. Much of this information could be found in general encyclopaedias, but there are specialized resources relating to literature as well. For example:

BENET, W.R. The reader's encyclopedia. 2nd ed. New York, Crowell, 1965.	R803 READ 1965
Cassell's encyclopedia of world literature; ed. by S.H. Steinberg. 2nd ed. London, Cassell, 1973. 3 volumes.	R803 C3-5
HARVEY, Sir Paul and EAGLE, Dorothy, editors. Oxford companion to English literature. 4th ed. Oxford, O.U.P., 1967.	R820.3 HAR 1

3.iii. Information about authors and their works

Information about authors and their work can be found in general encyclopaedias and biographical sources, or in literary handbooks. There are also specialized biographical and critical resources for literature, for example:

CONTEMPORARY AUTHORS: a bio-bibliographical guide to current authors and their works. Detroit, Gale, 1962- . Vol. 1- . With cumulated indexes. — R809.04 CONT

Contemporary literary criticism. Detroit, Gale, 1973- . With cumulated indexes. — R809.05 CONT

Great writers of the English language. London, Macmillan, 1979. 3 vols. (poets, novelists, dramatists) — R820.9 GREA 1-3

KUNITZ, S.J. and H.H. Twentieth century authors: a biographical dictionary of modern literature. New York, Wilson, 1942. + Supplement, 1955. — R809 K1-2

MAGILL, F.N. Masterplots: 2,010 plot stories & essay reviews from the world's fine literature. Englewood Cliffs, Salem, 1976. 12 vols. — R809 MAST

MAGILL, F.N. Survey of contemporary literature. Revised ed. Englewood Cliffs, Prentice-Hall, 1977. 12 vols. — R809.04 SURV

PENGUIN COMPANION TO LITERATURE. London, Allen Lane, 1971. 4 vols. (Britain and the Commonwealth, Classical Byzantine Oriental African; Europe; U.S.A., and Latin America) — R809 PEN 1-4

Reader's adviser: a layman's guide to literature. 12th ed. New York: Bowker, 1974. — R011 READ

SMITH, G.K. Australia's writers. Melbourne, Nelson, 1980. — R820 SMIT

3.iv. Definitions of words and phrases

Definitions of literary terms can often be found in general dictionaries, or in literary handbooks. There are also specialized literary dictionaries, for example:

BECKSON, Karl and GANZ, A. A reader's guide to literary terms: a dictionary. London, Thames and Hudson, 1961. — R803 BEC 1

CUDDON, J.A. A dictionary of literary terms. rev. ed. London, Deutsch, 1679. — R803 CUDD

HOLMAN, C.H. A handbook to literature. 3rd ed. Indianapolis, Odyssey P., 1972. — R803 HOL 1

SHIPLEY, J.T. Dictionary of world literary terms. London, Allen and Unwin, 1970. — R803 SHI 1

3.v. History of literature

Many questions of the type we have discussed can be answered from standard histories. These may be general, or may be limited to specific languages, periods, or viewpoints. For example:

GREEN, H.M. A history of Australian literature, pure and applied. Sydney, Angus and Robertson, 1961. 2 vols.	R829.09 GRE 1-2
SAXBY, H.M. A history of Australian children's literature, 1841-1970. Sydney, Wentworth P., 1969-71. 2 vols.	028.52 S 4
SEYMOUR-SMITH, M. Guide to modern world literature. London, Wolfe, 1973.	809.04 SEYM 1
WILSON, F.P. and DOBRÉE, B., editors. Oxford history of English literature. Oxford, Clarendon P., 1945- .	Various class numbers

3.vi. Information for writers

People seek information on how to write literature, and on how and where to publish it. Publications which may be useful in answering this kind of inquiry include:

CLARKE, J. Australian and New Zealand writers handbook. 2nd ed. Sydney, Reed, 1979.	808.02 AUS
GIBALDI, J. & ACHTERT, W.S. MLA handbook writers of research papers, theses and dissertations. N.Y., MLA, 1977.	R808.02 GIBA
Literary and library prizes. 10th ed. New York, Bowker, 1980.	R807.9 LITE 1980
STILLMAN, F. The poet's manual and rhyming dictionary. London, Thames and Hudson, 1966.	R808.103 STI 1
STYLE MANUAL FOR AUTHORS, EDITORS AND PRINTERS OF AUSTRALIAN GOVERNMENT PUBLICATIONS. 3rd ed. Canberra, A.G.P.S., 1978.	R808.042 STY 1978
TURABIAN, Kate L. A manual for writers of term papers, theses, and dissertations. 4th ed. Chicago, University of Chicago Press, 1973.	R808.066 TURA

3.vii. Lists of bibliographical information about literature

Lists of references can be found in many of the types of resource we have discussed. There are also many literary bibliographies, general and specialized. Bibliographies of works by and about individual authors are common. For example:

BAKER, E.A. A guide to historical fiction. N.Y., Burt Franklin, 1969.	R808.8381 BAKE
GALE, Steven H. Harold Pinter: an annotated bibliography. London, George Prior, 1978.	R822.91 PINT:G
MILLER, E.M. & MACARTNEY, F.T. Australian literature: a bibliography to 1938, extended to 1950. Sydney, Angus and Robertson, 1956. 3 vols.	R826 MIL 1
MLA directory of periodicals: a guide to journals and serials in languages and literatures. New York, MLA, 197[illegible].	R805 MODE
MUIR, K.M. A bibliography of Australian children's books. London, Deutsch, 1970-76. 2 vols.	R028.52 M 1-2
NEW CAMBRIDGE BIBLIOGRAPHY OF ENGLISH LITERATURE. Cambridge. C.U.P., 1972- .	
REILLY, J.M., ed. Twentieth-century crime and mystery writers. N.Y., St. Martin's Press, 1980.	R823.0872 TWEN
SMITH, Myron, J. Cloak-and-dagger bibliography: an annotated guide to spy fiction, 1937-1975. Metuchen, Scarecrow, 1976.	R823.0872 SMIT
TYMN, M.B. et al. Fantasy literature: a core collection and reference guide. N.Y., Bowker, 1979.	R823.0876 TYMN
TYMN, M.B., ed. Horror literature: a core collection and reference guide. N.Y., Bowker, 1981.	R823.0872 TYMN
WRIGHT, A. A reader's guide to English and American literature. Glenview, Scott, Foresman, 1970.	R820.16 WRIG

4. FORMATS OF INFORMATION RESOURCES IN LITERATURE

Below are listed some of the more common formats in which original literary works, and works about literature, may be found.

(1) Manuscripts. e.g. author's original draft. For works written before theinvention of printing, original publication was in manuscript form.

(2) Aural or visual records. e.g. plays, novels or poems on tape, cassette or disc, either video or audio or film of a theatrical performance. (The filming of a novel for cinema or television often leads to reissue of the book. 'Novelization' - the production of the 'book of the film' after the film - is becoming common.)

(3) Hardback books. The original publication format for most works of literature and books about literature.

(4) Paperback books. More popular poems, plays and novels may be published in this format, often after hardback editions appear. More ephemeral novels are often published only in paperback. New poetry and plays may be published only in paperback because of the financial problems of publishing in this small market.

(5) Annotated texts. Particularly for early works and the classics, texts may include introductory material, footnotes, glossary etc. Level ranges from elementary school texts to those intended for academic researchers. e.g. Arden edition of the works of Shakespeare, editions published by the Early English Text Society.

(6) Collections and anthologies. Essays, poems, plays or short stories may be collected by author or by theme, e.g. Collected works of T.S. Eliot, The Oxford book of English verse, a collection of critical essays on Jane Austen. Material in collections and anthologies has often been previously published elsewhere.

(7) Popular magazines and newspapers. Poems and short stories may receive their first, or only, publication in magazines and newspapers. e.g. Playboy, Saturday edition of the Sydney Morning Herald, New Yorker, Womans Weekly. Novels may be serialized in magazines.

(8) Literary journals. These may publish original literary works, or articles about literature, or both. Some poetry, plays and short stories are published only in this format. e.g. New poetry, Meanjin quarterly, Southerly, Times literary supplement.

(9) Series. Some publishers produce texts of literary works, or works about literature, in standard formats. e.g. Australian poets, Penguin new writers, Twayne's world authors series, Australian writers and their work.

5. LITERARY FORMS

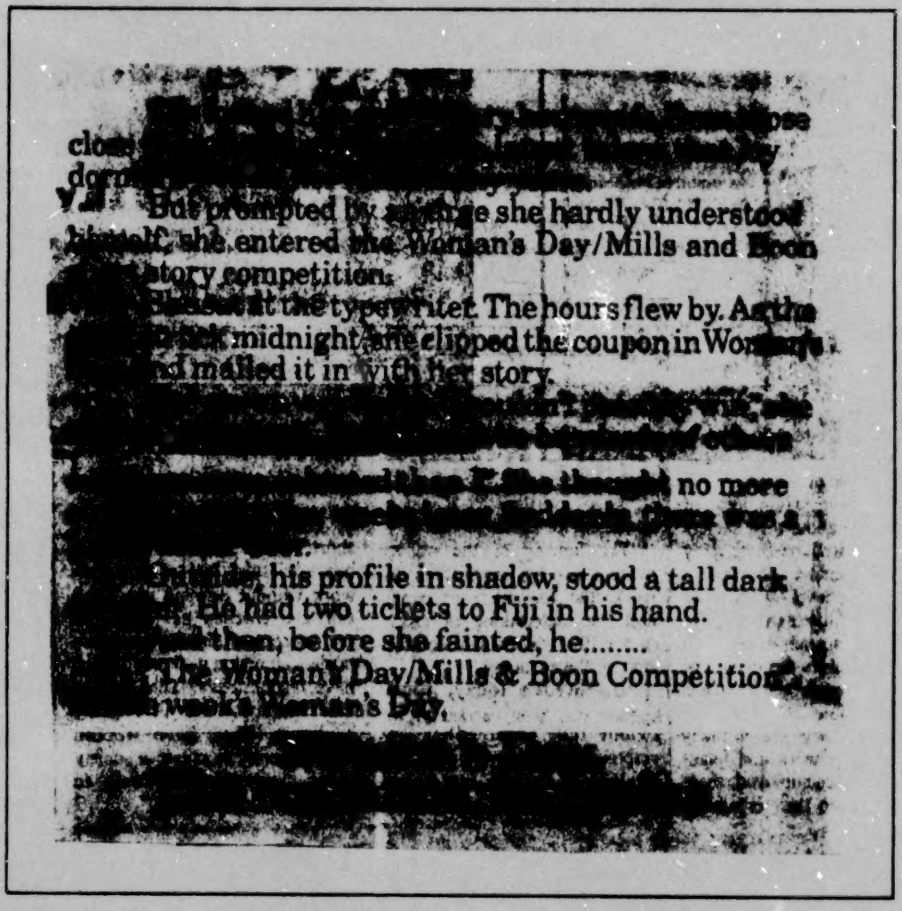
One of the common ways of categorizing literature is by literary form. (See p.5). In this section we will consider some characteristics of three forms, prose, poetry and drama, and some information resources which deal exclusively with one literary form.

5.i. Prose

There are various forms of prose literature - novels, short stories, essays, diaries, letters, humour and satire. For most people the novel is the most significant.

Novels

Some people distinguish between novels which have lasting literary value, and those that have not. In public libraries novels of the latter kind are often called 'fiction' and may be found shelved separately from 'literature'.



But prompted by [illegible] she hardly understood herself, she entered the Woman's Day/Mills and Boon story competition.

[illegible] at the typewriter. The hours flew by. At the stroke midnight she clipped the coupon in Woman's and mailed it in with her story.

[illegible] no more

[illegible] his profile in shadow, stood a tall dark [illegible]. He had two tickets to Fiji in his hand.

[illegible] then, before she fainted, he.....

The Woman's Day/Mills & Boon Competition [illegible] weeks Woman's Day.

Literature? or Fiction?

BEST COPY AVAILABLE

Evaluation and selection of novels

The evaluation of novels is difficult, because subjective judgements are involved, and because the value gained from reading novels is a very individual matter. Some of the criteria listed below might be considered.

- Characters. Are they consistent and credible? Do they develop?
- Plot. Is it probable, or consistent?
- Background. Are the time and place vividly and realistically created? Are the factual details accurate?
- Effect. Does the novel contribute to the reader's understanding of life or personal growth? Does it arouse a positive intellectual or emotional response?
- Moral or ethical value. Does it promote desirable attitudes and behaviour?
- Form and expression. Does its language and style have literary value?

Information resources for prose literature

People seek prose literature by particular authors, or on particular subjects. Among the information resources which can be used in such searches are:

COOK, D.E. and MONRO, I.S. Short story index. New York, Wilson, 1953- . — R016.808831 COO1-3

CUMULATED FICTION INDEX. 1960-69, 1970-74, 1975-79. London, Association of Assistant Librarians, 1980. — R808.83 CUMU

DAY, A.G. Modern Australian prose 1901-1975: a guide to information sources. Detroit, Mich., Gale Research, 1980.

FICTION CATALOG. 9th ed. New York, Wilson, 1975. + supplements. — R016.80883 WILS

HAGEN, O.A. Who done it? A guide to detective, mystery and suspense fiction. New York, Bowker, 1969. — R016.808837 HAG 1

MAGILL, F.N., ed. Cyclopedia of literary characters. N.Y., Harper & Row, 1963. — R803 MAG 1

READER'S ADVISER: A layman's guide to literature. 12th ed. New York, Bowker, 1974. 3 vols. — R011 READ

WALKER, W.S., comp. Twentieth-century short story explication: interpretations 1900-1975, of short fiction since 1800. London, Clive Bingley, 1977. — R016.80931 WALK

5.ii. Poetry

Reading poetry for pleasure is a minority interest: probably libraries are mainly concerned with poetry as a subject of study or academic research.

Evaluation and selection of poetry

The problems are similar to those involved in evaluating and selecting novels, with the important difference that the librarian is not usually under pressure to acquire material of 'doubtful literary merit'. It is particularly difficult to evaluate the work of recent poets who are not yet established.

In selecting the 'classics' of poetry, the authority of the edition, and the quality of introductory material, annotations, notes etc., must be considered.

In selecting anthologies, the scope of the material included and the editor's criteria for selection must be assessed.

Use of poetry

Texts of poetry are sought for pleasure and for study. Students and academic researchers make extensive use of critical works about poetry.

Additionally, many factual enquiries relating to poetry are made. For example people often wish to locate a particular poem, to trace the origin of a quotation from a poem, or to find poems on particular subjects or for particular audiences. There are specialized sources for answering this type of enquiry, for example:

BREWTON, J.E. and S.W. Index to children's poetry. New York, Wilson, 1942.
+ Supplements. — R808.81 BREW

CHICOREL INDEX TO POETRY IN COLLECTIONS IN PRINT, ON DISCS AND TAPES. New York, Chicorel, 1972.

GRANGER'S INDEX TO POETRY. 6th ed.
New York, Columbia U.P., 1973.
+ Supplement 1970-77. — R808.810016 GRAN

SELL, V. et al. Subject index to poetry for children and young people, 1957-75.
Chicago, A.L.A., 1957
+ Supplement 1977. — R808.91 SUBJ

Dictionaries of quotations may also be useful.

BARTLETT, J. Familiar quotations: a collection of passages, phrases, and proverbs traced to their sources in ancient and modern literature.
Boston, Little Brown, 1980. — R808.882 BART

Oxford dictionary of quotations. 3rd ed. Oxford, Oxford University Press, 1979. R808.882 OXF 1

5.iii. Drama

Techniques of performance and production fall within the province of performing arts: it is the written version of the play which is considered as literature. Reading plays is a minority interest. Libraries are concerned with drama mainly as a subject of academic literary study or from the point of view of production and performance.

Evaluation and selection of drama

The issues are similar to those discussed under poetry.

Since texts of plays are often required for production, it may be necessary to acquire editions prepared for this purpose. Multiple copies may be required.

Use of drama information resources

Texts of plays may be sought for pleasure, for study or for production. Students and academic researchers, producers and performers make use of critical works about drama.

Factual questions may relate to authors, plots, characters, performance, etc. People may wish to locate plays on particular topics or for particular audiences. Specialized information resources in drama include:

CHICOREL THEATER INDEX TO PLAYS FOR YOUNG PEOPLE IN PERIODICALS, ANTHOLOGIES AND COLLECTIONS. New York, Chicorel, 1974. R808.82 CHIC

CHICOREL THEATER INDEX TO PLAYS IN ANTHOLOGIES, PERIODICALS, DISCS, AND TAPES. New York, Chicorel, 1970- .

KREIDER, B.A. Index to children's plays in collections. 2nd ed. Metuchen, Scarecrow, 1977. R812.041016 1977

MCGRAW-HILL ENCYCLOPEDIA OF WORLD DRAMA: an international reference work in four volumes. New York, McGraw-Hill, 1972. R808.203 M1-4

SALEM, J.M. Drury's guide to best plays. 3rd ed. Metuchen, Scarecrow, 1978. R808.82 DRUR

6. INDEXING AND ABSTRACING SERVICES FOR LITERATURE

In literature, indexing services are used mainly to locate criticisms of literary works and writers. You should note, though, that some of them can also be used to locate original literary works, particularly when these are published in journals.

Some general indexing services are useful in literature, for example:

APAIS

Readers' guide to periodical literature

Indexing services covering the humanities generally are often useful, for example:

Arts and humanities citation index. New York, Institute for Scientific Information, 1978- .

Also indexes book reviews in journals.

British humanities index. London, Library Association, 1962- . R016.0013 BRI 1

Essay and general literature index. New York, Wilson, 1900- . R016.805 ESS 1

Indexes essays and articles in anthologies and collections.

Humanities index. New York, Wilson, 1976- . R016.0013 HUM 1

Supersedes Social sciences and humanities index.

Indexing and abstracting services which specialize in literature include:

Abstracts of English studies. Boulder, Colo., National Council of Teachers of English, 1958- . R016.805 ABS 1

Annual bibliography of English language and literature. London, Modern Humanities Research Association, 1921- . R016.82 ANN 1

MODERN LANGUAGE ASSOCIATION OF AMERICA. MLA international bibliography of books and articles on the modern languages and literatures. New York, MLA, 1921- .

7. INDEXES TO LITERARY BOOK REVIEWS

Book reviews are important aids to librarians in evaluation and selection. They may also be useful in answering information enquiries. Book reviews are included in several of the indexing services listed above. (Be careful - reviews are sometimes in a separate section.)

In addition there are a number of indexing services which deal exclusively with reviews, for example:

Book review digest. 1905- . New York, Wilson.	R028.1 BOO 1
Current book review citations. New York, Wilson.	R028.1 CURR
Index to Australian book reviews. 1965- . Adelaide, Libraries Board of S.A.	R028.10994 IND 1

8. MACHINE-READABLE DATA BASES

Computer-based information services are not common in literature. This is partly because there is little financial support, or incentive, for such services, and partly because the subject does not lend itself to highly sophisticated indexing and searching techniques. One example of a computer-based service is:

MLA Bibliography

On-line access to the Modern Language Association's bibliography of books and articles on language, literature and linguistics.

Arts and humanities citation index is also available for computer searching.

Computers are increasingly being used in some areas of literary and linguistic studies, for example the preparation of concordances, and studies to determine the authenticity, by word counts and linguistic analysis, of literary works whose authorship is disputed.

9. STUDY QUESTIONS AND EXERCISES

1. List the characteristics which you consider are essential to the nature of literature.

2. How would you categorize an English translation of Italian epic poetry intended for children, and shelved with the books used by adult migrants learning English? (Refer to pp. 4-5).

3. Choose any two "guides to the literature" which cover literature. Write a short comparison and evaluation of them in note form.

4. Answer the following questions using resources of the type listed in Sections 3.ii - 3.vi. Try to locate answers from at least two sources, and critically analyze the differences in the information given.

(a) Define the term "realism" in a literary context.

Answer found in 1.

2.

Which source do you prefer?

Why?

(b) What kind of literature did Pablo Neruda write?
Have his works been translated into English?
What was his real name?
When did he win the Nobel Prize?

Answer found in 1.

2.

Which source gives a more complete answer?

Why?

(c) List some of the writers who have contributed to the understanding of Australian aboriginal myths and legends. Who is the most well-known authority?

Answer found in 1.

2.

Which source did you prefer?

Why?

(d) List the Nobel prizewinners for literature during the 1970s.

Answer found in 1.

2.

Which did you prefer?

Why?

5. List the various formats in which you think a play might be made available to people.

6. What do you see as the differences between "fiction" and "literature"? Give some examples of each. Which do you read?

7. Do you consider the evaluation criteria for novels listed on p. 14 are valid? Can you suggest more valid criteria?

8. Use information of the type listed in section 5.i to answer the following questions:

   (a) Find a list of novels about librarians.
   What is Mundome by A.G. Mojtabai about?

8. (b) Who wrote a short story called Bliss?
Give details of its publication.

(c) List titles of short stories about immigrants.
What is the subject of Eyes by C. Blaise?

9. Use information resources of the type listed in 5.ii to answer the following questions:

(a) Locate three poems about husbands. Provide publication details.

(b) Name the author of the poem "After Passing the Examination".

Where can a copy be found?

(c) Find the titles of four poems (suitable for children) about prehistoric animals. Give publication details.

(d) Who said "The good ended happily, and the bad unhappily. That is what fiction means."

10. Use information resources of the type listed in Section 5.iii to answer the following questions:

(a) What can you find out about the playwright Frank Wedekind?
What are the titles of some of his plays?
What is the play "Such is Life" about?
How many characters does it have?

(b) Give the titles of plays or puppet plays suitable for an all female cast of five children.

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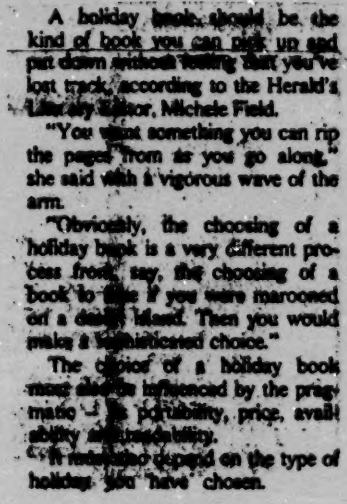
12. You are asked to help a first year college student who has to write an assignment on "The achievements of..." (Choose any literary writer you like.) The student knows absolutely nothing about this writer.

Consider what you would do before you actually start searching. In particular,

(i) analyse the question. What concepts are involved? What types of information will you be looking for?

(ii) list all the types of information resource you would look in (e.g. indexing service, library catalogue, etc.). Decide which order you would use them in. For each one, decide what type of information you would expect it to provide. (For example, author catalogue - books by the writer, etc.)

13. Sue Johnson in the Sydney Morning Herald of July 11th, 1981, on p. 40 wrote:



A holiday book should be the kind of book you can pick up and put down without feeling that you've lost track, according to the Herald's Literary Editor, Michele Field.

"You want something you can rip the pages from as you go along," she said with a vigorous wave of the arm.

"Obviously, the choosing of a holiday book is a very different process from, say, the choosing of a book to take if you were marooned on a desert island. Then you would make a sophisticated choice."

The choice of a holiday book must also be influenced by the pragmatic — its portability, price, availability and readability.

It may also depend on the type of holiday you have chosen.

Choose three books suitable for holiday reading for your lecturer, who is going to the Gold Coast.

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II. FINE ARTS

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1. OBJECTIVES

When you have completed this segment, you should be able to answer or discuss questions such as these:

i. What are some of the major characteristics of the fine arts?

ii. What are the subjects usually included in the fine arts?

iii. How can the visual arts and music be categorized?

iv. What are some of the important types of information resource used by people interested in art and music?

v. What are the formats of original art works and original works of music?

vi. What are the uses of information resources in art and music?

vii. What are the evaluation criteria to be taken into account in selecting art and music information resources?

You should also have acquired certain skills, in particular:

i. identify and select information resources appropriate for enquiries concerning art and music.

ii. use some art and music information resources effectively.

iii. evaluate the resource, and the information contained, and judge their appropriateness for particular users.

2. THE FINE ARTS: WHAT ARE THEY?

The fine arts are concerned with the production of things of beauty, and of intellectual and emotional significance, in forms appreciated through the senses.

In its broadest sense, art is acquired skill in making or doing anything. Hence we can speak of the art of conversation, or the art of making a soufflé. Usually, however, the term is used to describe human activities which involve creativity, imagination, aesthetic sense and sensibility, as well as technical skill. The fine arts appeal to the eye or ear, and are distinguished in modern usage from the literary arts and the liberal arts (philosophy, history etc.), which are primarily verbal.

It is conventional to classify the fine arts into

(i) visual arts - especially painting and drawing in all its forms, but also including graphic arts (e.g. photography, etching, lithography) and perhaps decorative arts (e.g. enamelling, embroidery).

(ii) plastic arts - sculpture and three-dimensional art forms (e.g. pottery). Alternatively the plastic arts may be classified as a branch of the visual arts.

(iii) building arts - architecture and the related arts of landscape design, town planning etc. Alternatively, these may be classified as a branch of the visual arts.

(iv) performing arts - theatre, dance, opera. Film may be classified as a performing or a visual art.

(v) auditory arts - music.

There is considerable overlap between these categories: for instance the performing arts include elements of the visual arts (stage settings, costumes), and often use music.

Many people think of fine arts and visual arts as being synonymous, and regard music as a separate, though closely related, discipline.

An alternative classification distinguishes between fine and useful arts. Useful arts involve the creation of a functional object which is incidentally beautiful, rather than an object whose beauty is sufficient reason for its existence. Furniture and jewellery making, weaving, bookbinding and pottery may be seen as examples of useful arts. However the distinction is often an artificial one. A related idea is the concept of decorative arts.

In popular thinking, the artist is a rare individual, a genius, or one endowed with exceptional gifts or temperament. The traditional concept of fine arts therefore carries implications of excellence and elitism. Fine arts are frequently contrasted with mass or popular culture.

"The most immoral and disgraceful and dangerous thing that anybody can do in the arts is knowingly to feed back to the public its own ignorance and cheap tastes" (Edmund Wilson).

However, this distinction is being increasingly challenged.

This segment is concerned with the fine arts in general, and emphasizes those of painting and music in particular.

2.i. Overview and orientation

As usual, guides to the literature are useful if you are not sure what is included in the subject, or what types of information resource it uses. General guides such as WALFORD and SHEEHY are useful. Examples of specialized guides include

ASHEIM, Lester et al. The humanities and the library: problems in the interpretation, evaluation and use of library materials. Chicago, A.L.A., 1957. Chapter 3. — 020 ASH 1

CARRICK, Neville. How to find out about the arts: a guide to sources of information. Oxford, Pergamon, 1965. — 700 C 1

DOVE, Jack. Fine arts. Sydney, James Bennett, 1966. (Readers guide ser.) — R028.7 D 1

EHRESMANN, Donald L. Fine arts: a bibliographic guide to basic reference works, histories, and handbooks. 2nd ed. Littleton, Colo., Libraries Unlimited, 1979. — R 700 EHRE

JONES, L.S. Art research methods and resources: a guide to finding art information. Dubuque, Iowa, Kendall/Hunt, 1978.

LUCIE-SMITH, Edward. Cultural calendar of the 20th century. Oxford, Phaidon Press, 1979.

PACEY, Philip. Art library manual: a guide to resources and practice. London, Bowker, 1977. — 026.7 PACE

3. VISUAL ARTS

In the first part of this guide visual arts will be examined, with emphasis on the 'major' art of painting. The importance of visual information is recognized in the much quoted statement - "one picture is worth a thousand words".

> 'One picture, it is said, is worth a thousand words. How that figure was arrived at, I don't know. Being a word lover, I would be inclined to reverse the ratio. One word, such as "yes" or "no", said at the right time, is worth a great many pictures, especially some of those painted by members of the Op Art or Pop Art school.
>
> But I must confess that a picture may convey a meaning or carry a message better than something written, especially when the writing is jargon or unnecessarily complex. And we know that a child can recognize something in a picture, say a house or a dog, long before being able to read the words.'

The second part will concentrate on music.

3.i. Categorizing visual arts

The visual arts can be categorized according to the medium or technique employed, e.g.

> Painting, drawing, sketching, book illustration, oil painting, water colour, lithography, woodcutting, photomontage

or by subject matter, e.g.

> Portraits, cartoons, still life, nudes, landscape

or by style, e.g.

Abstract, realism, primitive.

Frequently, visual arts are categorized according to culture or country, e.g.

Western art, Oceanic art, Islamic art, French art, Aboriginal art

or by historical period, e.g.

Mediaeval art, Modern art

or by broad cultural movements which transcend national boundaries, e.g.

Early Christian, Romanesque, Renaissance, Baroque, Rococo

or by movements or schools, e.g.

Mannerism, Impressionism, Fauves, Bauhaus, Dada, Kitchen sink.

4. NATURE AND USE OF INFORMATION RESOURCES IN VISUAL ARTS

Like literature, the visual arts are concerned with imaginative, partly subjective, experience. The information resources of the two subjects, and the uses to which they are put, are similar in many ways.

People who study, or enjoy, visual arts, need access firstly to the artistic works themselves. But whereas libraries by definition contain original works of literature, they do not usually contain original works of art. (Some libraries do: for example the Mitchell Library and the National Library of Australia have important collections of Australian art.) Generally libraries provide raw material for the art student or enthusiast in the form of reproductions. These may be:

1. single copies for hanging or display
2. slides
3. photographs
4. exhibition and sales catalogues
5. framed prints, posters
6. illustrations in books or journals
7. postcards
8. microfiche

Secondly, users require access to works of history, criticism and interpretation relating to the original works. The formats of art information resources therefore include monographs and periodicals but other formats are more important. Exhibition catalogues constitute an important resource in art. Catalogues of private collections, and auction catalogues produced by such organizations as Sotheby's form a major part of any art collection. As well as reproductions, catalogues contain biographical information about artists, the history of individual works of art, early prices, and background on specific collections and collectors. Slides are used for teaching purposes, but also familiarize users with individual works of art. Photographs or posters may record original art works but are increasingly becoming regarded as art forms in themselves. While coloured photographs reproduce original colours, black and white photographs convey enormous amounts of information on the techniques of painting, brushwork and texture, and can assist in ascribing paintings to specific artists. Microfiche, particularly coloured, is also being used to reproduce major art collections. The Chicago Visual Library at the University of Chicago Press has a large stock of text-fiche publications. Videotape and motion picture films are also formats now available. Attention is also being paid to art ephemera, and such items as labels, wrappers, containers, advertisements, pamphlets such as travel brochures, trade catalogues, sample books and various stationery are being seriously collected because of their visual content and their expression of cultural tradition. Computer graphic forms are a growing trend.

Works of art history, criticism or interpretation may be aimed at the scholarly researcher, the student, or the interested layperson.

Works of art have other functions besides those of aesthetic and emotional communication. Sometimes these functions were intended by the artist. For example, religious paintings were intended as aids to devotion and spiritual enlightenment: before the development of photography, painting was an important means of recording events and natural phenomena. Works of art may also be important sources of historical and anthropological evidence, or of social documentation, although their creators did not intend this. (When libraries do collect original art works, it is often for social or historical purposes.) The functions of works of art differ for the creator and the owner or purchaser. The creator may wish to interpret events and communicate that interpretation or comment, or merely record natural phenomena. For the owner, a work of art may be viewed as an investment, decoration, or as an insight into the world around us.

Artistic works are valued as investments, and people may seek information on current sales and prices, or documentation to establish the authenticity and provenance of a work.

While most libraries are probably concerned mainly with 'consumers' of art, practitioners - especially amateurs and hobbyists - may seek information on techniques or materials. Information may be sought on means of exhibiting or selling works. Graphic artists, and those engaged in such fields as advertising, display and industrial design, may seek factual information (e.g. details of costume) or models. (It should be remembered though that many people would not include amateur art and commercial art in the fine arts.)

5. EVALUATION AND SELECTION OF INFORMATION RESOURCES IN VISUAL ARTS

Most librarians are not concerned with evaluating and selecting original works of art. Those who are are often more concerned with the historical or cultural significance of the work than with its aesthetic appeal.

In evaluating works of criticism and interpretation, all the usual criteria apply. (Refer to APPARATUS.) In selecting reproductions, the quality of the reproduction, and its accuracy, are particularly important. Colour is obviously preferred to black and white, but is frequently more expensive. Librarians often rely on the reputation of specialist publishers, such as Phaidon, Thames and Hudson or New York Graphic Society. Paper quality is important. Quality publications in this field are necessarily expensive, and in non-specialist libraries quality may have to be sacrificed to wider coverage. Coverage is a difficult problem. There are many schools of art and many periods to be covered. Problems of personal taste arise. There are physical considerations of size and durability to be considered, and whether to obtain framed or unframed reproductions. The difficulties in evaluating artistic works are demonstrated in the titles of four "Experiences in working at art" lectures held recently at the Art Gallery of New South Wales -

"They don't paint pictures like they used to."

"I don't know anything about art but I know what I like."

"Call that beautiful! A child of six could have done it!"

"They paid $250,000 for it! I wouldn't hang it in my toilet!"

There may be problems associated with censorship. Any collections of art works should have good indexes to locate individual works with ease.

Many different types of libraries collect art works. For all these, problems of space for housing and loan policies occur. In any collection of art works, decisions must be made about the scope of the collection with regard to time periods covered, popularity of artists included, and country of origin.

6. SPECIFIC TYPES OF INFORMATION RESOURCE IN VISUAL ARTS

6.i. Short, factual questions

Many short, factual questions relating to the history, techniques and interpretation of the visual arts can be answered from general encyclopaedias, dictionaries, directories, etc. Examples of encyclopaedias and handbooks relating specifically to visual arts include

Encyclopedia of world art. N.Y., McGraw-Hill, 1959-68. 15 vols. — R703 E 1-15

McGraw-Hill dictionary of art. Ed. by B.S. Myers N.Y., McGraw-Hill, 1969. 5 vols. — R703 McG 1-5

The Oxford companion to art. Ed. by H. Osborne. Oxford, Clarendon P., 1970. — R703 O 1

MURRAY, P. and L. A dictionary of art and artists. London, Thames and Hudson, 1965. Revised edition. Penguin Reference Series 1972.

McCULLOCH, A. Encyclopedia of Australian art. Richmond, Hutchinson, 1968. — R709.94 M 1

GAUNT, William. Everyman's dictionary of pictorial art. London, Dent, 1962. 2 vols. — R759 GAU 1-2

MILLS, John FitzMaurice. The Guinness book of art facts and feats. Enfield, Guinness Superlatives, 1978. — R709 MILL

6.ii. Terms

Definitions of terms can often be found in general dictionaries, or in specialized encyclopaedias and handbooks like those listed in Section 6.i. Specialized dictionaries in the visual arts include

ADELINE, Jules. The Adeline art dictionary; including terms in architecture, heraldry, and archaeology. N.Y., F. Ungar, 1967. — R703 ADE 1

MAYER, Ralph. A dictionary of art terms and techniques. London, A. and C. Black, 1969. — R703 M 3

WALKER, John A. Glossary of art, architecture and design since 1945. 2nd ed. London, Bingley, 1977. — R709.04 WALK

6.iii. Individual artists

Many short factual enquiries relate to the life and productions of individual artists. Often these can be answered from general encyclopedias and biographical directories like Who's who, or from specialized encyclopedias and handbooks like those listed in Section 6.i. Specialized biographical directories for the visual arts include

Contemporary artists. Ed. by C. Naylor, Genesis P-Orridge. London, St. James, 1977.	R709.22 CONT
Who's who in art. 17th ed. Havant, Art Trade Press, 1974.	R709.2 WHO 1
CUMMINGS, P. A dictionary of contemporary American artists. 3rd ed. London, St. James, 1977.	R709.22 CUM 1
GERMAINE, M. Artists and galleries of Australia and New Zealand. Sydney, Lansdowne Editions, 1979.	R709.94 GERM
HARRIS, A.S. and NOCHLIN, L. Women artists: 1550-1950. N.Y., Knopf, 1977.	R709.03 HARR
MUIR, Marcie. Australian children's book illustrators. Melbourne, Sun Books, 1977.	R741.6420994 AUST

6.iv. Organizations and services

Galleries, museums, specialist associations and art dealers are important information resources in the visual arts. They may give specialist advice, opinions about the authenticity of works, and valuations. They organize exhibitions, and publish catalogues which are in themselves important information resources. Some have significant specialized libraries, e.g. The Australia Council.

Some Government and non-government organizations provide financial and other support for the arts, for example the Australia Council, the Guggenheim Foundation.

Commercial organizations are important in facilitating the sale and exhibition of works of art, and in supplying the tools of the artist's trade.

Information about organizations and services can be obtained from general directories, such as World of learning, Commonwealth government directory, and the telephone directory. Examples of specialized directories are

AUSTRALIA COUNCIL. OZARTS: A guide to Arts Organizations in Australia. Arts Information Program of the Australian Council, 1979.	R700.6094 OZAR
Fine arts market place, 1977-1978. N.Y., Bowker, 1977.	R702.573 FINE
HULL, A. and BINNS, V. Community arts directory. Sydney, Australia Council Community Arts Program, 1976.	R790.0135 HULL

Guide to craft supplies. Mitcham, Van Nostrand Reinhold, 1977. R680 CRAF

AUSTRALIA COUNCIL. Ethnic arts directory. North Sydney, Australia Council. R700.2594 ETHN

The arts are heavily reliant on subsidies and directories listing organizations providing grants are most useful.

Directory of government grants. Sydney, N.S.W., Government Information Service, 1981.

6.v. How to do it

Some examples of handbooks and manuals for the practicing artist are

QUICK, John. Artists' and illustrators' encyclopedia. N.Y., McGraw-Hill, 1969. R760.03 Q1

SCHIDER, Fritz. An atlas of anatomy for artists. 3rd American ed. N.Y., Dover, 1957. R741. S 1

MAYER, Ralph. Artists' handbook of materials and techniques. 3rd rev. ed. London, Faber, 1973.

6.vi. Prices and Prizes

Valuations and information about prices can be obtained from some of the types of organization listed in Section 6.iv., or from individual experts. There are also published resources, for example

Annual art sales index. Weybridge, Eng., Art Sales Index Ltd.

Art prices current. London, Internat. Pubns. Services, 1908- .

Australian art auction records, 1975-1978. Milsons Point, Mathews, 1978. R759.94075 AUST

Details of various art competitions and prizes can be located in

Art Gallery of New South Wales. Competitions and prizes. Sydney. Annual.

6.vii. Standard histories

When insufficient information is found in encyclopaedias, handbooks, etc., more detailed factual information may be found in standard histories. Standard histories are those generally acknowledged to be authoritative and exhaustive accounts of the subject, based upon extensive research and including bibliographies. They may be general in scope, or restricted to a particular culture, country, period, movement, school medium or artist. Some representative examples are

PEVSNER, Nilolaus, ed. The Pelican history of art. Harmondsworth, Penguin, 1953- . In progress.

ROBB, D.M. and GARRISON, J.J. Art in the western world. N.Y., Harper and Row, 1963. R709 ROB 1

FLETCHER, Sir Banister. A history of architecture. 18th ed. London, Athlone P., 1975. R720.9 FLE 1

6.viii. Finding reproductions

People often want to find a reproduction of a particular work, or the work of a particular artist. Sometimes they may want to find out where they can buy a particular reproduction. In the former case, some of the resources we have already discussed will be useful, for instance encyclopaedias, handbooks and biographical directories. There are also special indexes which will be helpful in both types of enquiry, for example

HAVLICE, Patricia Pate. World painting index. Metuchen, Scarecrow, 1977. 2 vols. R750.16 HAVL

Catalogue of reproductions of paintings 1860 to 1973. Paris, Unesco, 1974. R760.216 UNE 1

BARTRAN, M. A guide to color reproductions. 2nd ed. Metuchen, Scarecrow, 1971. R769.02573 BART

Reproductions included in periodical articles are indexed in:

Art index. N.Y., Wilson, 1929- . R016.7 ART 1

Arts and humanities citation index. Philadelphia Institute for Scientific Information, 1977- .

6.ix. Indexing Services

References to journal articles on the visual arts can be found in a number of general indexing services, such as APAIS, Arts and humanities citation index, British humanities index, Humanities index and readers guide to periodical literature. There are also specialized indexing services for the visual arts:

Art index. N.Y., Wilson, 1929- . R016.7 ART 1

Artbibliographies modern. Oxford, Clio Press, 1969- .

A specialized current awareness service is also published.

Artbibliographies current titles. Oxford, Clio Press, 1972- .

Some of these are available in machine-readable form.

7. MUSIC: WHAT IS IT?

7.i Defining music

We all know what music is - or do we?

7.ii. Categorizing music

Music may be categorized according to the country, culture or period which produced it, according to genre, according to the medium or type of performance for which it was written, according to its purpose or intended audience, and in many other ways. Many of the categorizations we use assume a western viewpoint - for example 'classical' music is the music of Western Europe, or derived from it - or judgements about the worth and lasting significance of different types of music - for example 'classical' or 'serious' music vs 'popular' music.

8. NATURE AND USE OF INFORMATION RESOURCES IN MUSIC

The information resources of music, and the ways in which they are used, are in many respects similar to those of the visual arts and of literature.

(i) The user of the resources may be a 'consumer' of music. That is, he may be a student, or a scholarly researcher, interpreter or historian of music, or he may be an amateur who uses music for pleasure, to alleviate boredom or stress, for personal development, and so on. The user may also be a practitioner of music, amateur or professional, novice or expert. The practice of music involves both performance and composition.

(ii) As in literature and the visual arts, the student or enjoyer of music requires access to raw materials. Arguably the raw material of music is the live performance, a form not normally encountered in libraries. Libraries do however deal with the raw material of music in two forms, printed music and records of performances on paper roll, disc, tape, video film. Printed music may consist of sheet music in the form of single works or the collected works of composers, scores, and librettos. Some of these may be collected for particular voices, or at different levels of skill. If it is required for performance, multiple copies and separate parts as well as complete scores will be needed.

(iii) The student or enjoyer of music also needs access to works of history and interpretation relating to music, to biographical and critical material on composers, and to expert judgements on particular works or performances. The practitioner may need information on instruments and techniques. Programmes prepared for performances frequently contain valuable information. Record sleeves are also valuable sources of information.

(iv) Music may be utilized by people whose primary interest is not in music for its own sake. For example, popular music is an important information resource for the social historian, as is folk or religious music for the anthropologist. Particular types of music may be required by theatrical producers, advertisement writers, teachers, therapists and many others.

9. EVALUATION AND SELECTION OF INFORMATION RESOURCES IN MUSIC

Evaluation and selection of music is similar to that of visual arts and literature, in that the experience of music is personal, and subjective judgements are involved. As with the visual arts and literature, we assume that it is possible to make some distinctions between products which have lasting value and significance, and those which are ephemeral or derivative, although the border between the two is a very grey one, and definitive differences cannot be established. The distinction between 'classical' or 'serious' music and 'popular' music has in the past seemed important to librarians. The inclusion of forms such as punk and rock in library record collections is still problematic, not only because of questions of value judgement, but also because demand changes very quickly.

In the selection of records and tapes, judgements are made of the relative value of different interpretations and performances, as well as of composers.

In selecting music, and especially in selecting records and tapes, librarians rely extensively on the authority of producer or performers, and on expert reviews.

10. SPECIFIC TYPES OF INFORMATION RESOURCE IN MUSIC

10.i. Overview and orientation

WALFORD and SHEEHY are useful. Specialized guides to the literature include

ASHEIM, L. The humanities and the library: problems in the interpretation, evaluation and use of library materials. Chicago, A.L.A., 1957. Chapter 4. — 020 ASH 1

BRYANT, G.T. Music. London, Bingley, 1965. (Readers guide ser.) — R016.78 BRYA

DUCKLES, V.H. Music reference and research materials: an annotated bibliography. 3rd ed. N.Y., Free Press, 1974. — R 016.78 DUC 1

WATANABE, R. Introduction to music research. Englewood Cliffs, Prentice-Hall, 1967. — 780.72 WAT 1

10.ii. Short, factual questions, definitions

Examples of encyclopaedias, dictionaries and handbooks in music are

COBBETT, W.W. Cobbett's cyclopedic survey of chamber music. 2nd ed. London, O.U.P., 1963. 3 vols. — R785.7003 COB 3

Diagram Group. Musical instruments of the world: an illustrated encyclopedia. London, Paddington Press, 1976. — R781.9103 DIA 1

EWEN, David. The new encyclopedia of the opera. N.Y., Hill and Wang, 1971. — R782.103 EWE 1

FEATHER, Leonard. The encyclopedia of jazz. N.Y., Horizon P., 1960. — R781.5703 FEAT

KENNEDY, M. Concise Oxford dictionary of music. 3rd ed. London, Oxford University Press, 1980. — R780.3 KENN

Kobbe's complete opera book. 9th ed. London, Putnam, 1976. — R782.13 KOBB

New Grove dictionary of music and musicians. 6th ed., edited by S. Sadie. London, Macmillan, 1980. 20 vols. — R780.3 GRO 1-20

The illustrated encyclopedia of rock, by LOGAN, Nick and WOFFINDEN, Bob. N.Y., Harmony Books, 1976. — R784 ILLU

The Oxford companion to music, by P.A. Scholes. 10th ed. London, O.U.P., 1970. — R780.3 SCH 1

VINTON, John. Dictionary of twentieth-century music. London, Thames and Hudson, 1974. — R780.904 VIN 1

The contents of The New Grove

Extent
20 volumes, each of 750 pages; over 18 million words; 22500 articles and 7500 cross-references

Illustrations
Over 3000, occupying about seven per cent of the total space: tables, technical diagrams, family trees, maps, instruments in performance, places, musical autographs, portraits

Music-type examples
Over 2500

Biographies
Over 16500 on composers, writers, performers, publishers, instrument makers etc , from ancient times to the present day

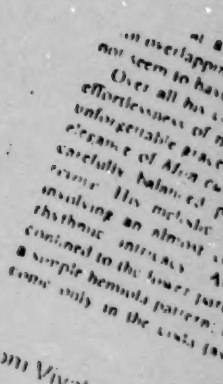
Instruments
Nearly 1 million words

Places
About ¾ million words

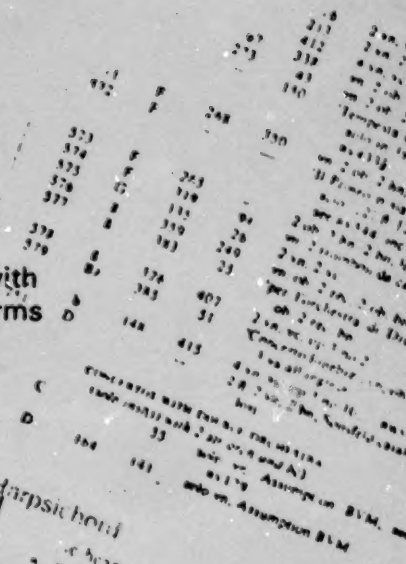
Non-Western and folk musics
Over 1 million words, with index of about 8000 terms

Musical forms
Nearly 1 million words

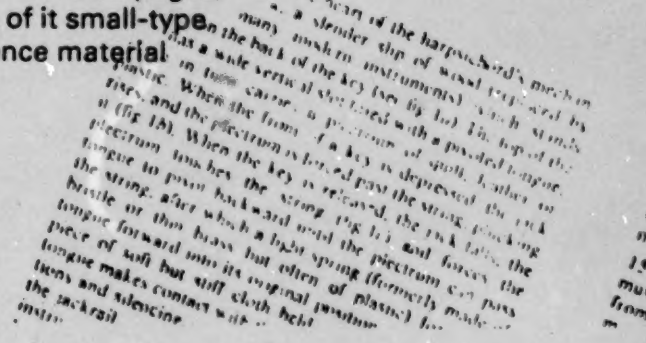
Bibliographical material
More than 500 pages, much of it small-type reference material



from Vivaldi



from harpsichord



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For the general music lover

- Articles on composers, graded in length from a few lines on the more obscure to substantial, clearly presented, 25-page accounts of the life and works of the great composers, contributed by leading authorities, with detailed lists of works
- Many hundreds of brief definitions of the terminology of music
- Entries by leading critics on present-day performers, including important jazz and popular musicians
- Coverage of institutions and the musical traditions of countries, cities and towns
- Surveys of the history of musical forms and the repertory they embrace
- Articles on musical instruments, ancient and modern
- Lavish half-tone and line illustrations serving to clarify the text

For the specialist scholar

- Composer articles setting new standards of detail in work-lists (including the fullest possible source information) and bibliographies with an extended coverage of Renaissance and Baroque composers reflecting trends in recent scholarship
- Substantial descriptive entries on early source material
- Wide coverage of the music of ancient civilizations and full treatment of early liturgical music, Christian and non-Christian
- Master bibliographies of literature on early music
- Entries dealing conceptually and historically with the materials of music (mode, melody, analysis, notation etc)
- Ethnomusicological coverage of every part of the world
- A comprehensive cross-reference system; many cross-references leading from 'dictionary' definitions to encyclopedia historical surveys
- Index of non-Western terms and instruments
- Extensive coverage of reference material (libraries, editions, printing etc) with detailed listing of musical periodicals
- Up-to-date work-list and bibliographical material essential for the cataloguer

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10.iii. People

Many of the resources listed in section 10.ii. give biographical information on composers, performers and people connected with music, living and dead. General encyclopaedias and directories are also useful. Examples of biographical directories in music are:

MURDOCH, James. Australia's contemporary composers. Melbourne, Macmillan, 1972. — R780.994 M 1

International who's who in music and musicians' directory. 8th ed. edited by Ernst Kay. Cambridge, Melrose P., 1977. — R780.92 INTE

10.iv. Organizations and services

Organizations are important in music for a variety of reasons. They organize concerts, promote productions or commission works (e.g. A.B.C., Sydney Opera House). They have libraries and information centres (e.g. Sydney Opera House Library). They sell, make or repair musical instruments, and publish or sell sheet music and recordings. They teach music, at all levels from hobby and juvenile, to advanced professional (e.g. N.S.W. Conservatorium). Australian organizations connected with music are listed in:

Directory of Australian music organizations. Sydney, Australia Music Centre, 1978. 2nd edition published 1979. — R780.60994 DIRE

The Australia Music Centre, 2nd Floor, 80 George Street, The Rocks, provides many facilities and services. Two of its aims are:

- To offer an information service on music matters to the profession, industry and to the general public.
- To build up a representative collection of Asian music.

The Centre is recognized by the Australian National Commission for UNESCO as the official Music Information Centre (MIC) in Australia.

The Centre has specialized collections of Asian music, ethnic music, and Australian Aboriginal music.

Australian music directory. Ed. by P. Beilby and M. Roberts. Melbourne, 1981. — R780.42 BEIL

This new handbook has articles on music in Australia, lists of Australian music organizations, services, facilities and venues, statistics of music production and lists of available recordings.

The National Library of Australia through its Music and Sound Recordings Unit has an extremely large collection of Australian music. Current LPs are deposited by Australian record

manufacturers and many 78's have been acquired through an extensive collecting programme. The unit also maintains a National Union Catalogue of music. In the library's 1977/78 annual report, the holdings were given as 265,000 recordings and tapes and 34,302 scores.

10.v. Finding musical works for performance

Performers may seek information on works suitable for a particular medium or occasion. Or they may wish to find out what works a particular composer has written, and where they can be obtained. Examples of resources which are useful for such questions are:

SEARS, M.E. Song index: an index to more than 12,000 sings in 177 song collections ... N.Y., Wilson, 1926. Plus supplement, 1934. — R016.784 SEA 1

CUSHING, Helen Grant. Children's song index: an index to more than 22,000 songs in 189 collections ... N.Y., Wilson, 1936.

COFFIN, B. Singer's repertoire. 2nd ed. N.Y., Scarecrow, 1960. 5 vols. — R016.784 COF 1-4

Vocal and choral music. Sydney, Australia Music Centre, 1976. — R016.7840994 AUST

CITY OF SYDNEY PUBLIC LIBRARY. A select list of music scores. 5th ed. Sydney, 1974.

10.vi. Selecting records and tapes

Bibliographies of recordings are an important aid to selection, the evaluative ones being the most useful. A bibliography of records is known as a discography. Record reviews are also important. Information resources useful in this area include:

GREENFIELD, E. et al. The Penguin stereo record guide. 2nd ed. Harmondsworth, Penguin, 1977. — R789.912

Schwann record and tape guide. Boston, Schwann. Monthly.

The gramophone. 1923- . Monthly. — 789.913105 GRA 1

The Gramophone classical record catalogue. Quarterly.

The Gramophone popular record catalogue. Quarterly.

COOPER, D.E. International bibliography of discographies: classical music and jazz and blues, 1962-1972. A reference book for record collectors, dealers and libraries. Littleton, Colo., Libraries Unlimited, 1975. — R016.78 COO 1

Annual index to popular music record reviews. Metuchen, Scarecrow. — R016.78042 ANN 1

BUZACOTT, M. A select list of literature, music scores and sound recordings in print. 2nd ed. Music Australia, 1979.

Music Australia, 1981: a select list of literature, music scores and sound recordings in print. Ed. M. Buzacott. Sydney, Australia Music Centre, 1981. (annual)

10.vii. Indexing and abstracting services

In addition to those types of publications which index musical works mentioned in section 10.v. are those which index musical literature in periodicals, newspapers, books etc., such as:

Music index. Detroit, Information Coordinators, 1949- .
Indexes about 300 periodicals representing various aspects of the music field ranging from musicology to the retailing of music. Includes music reviews.

RILM: abstracts of music literature. New York, International Association of Music Libraries, 1967- .
Abstracts and indexes periodical articles, reviews, books and theses in the field of music.

11. STUDY QUESTIONS AND EXERCISES

1. What are the main differences between "arts" and "crafts"?

2. List five formats in which reproductions of original art works may be located.

3. List three functions of works of art.

4. List the criteria you consider important in selecting:

   (i) reproductions of paintings for a loan collection in a public library.

   (ii) reproductions for the library of a college which teaches the history, appreciation and techniques of visual aids.

   (iii) original paintings, drawings and photographs for the Mitchell Library.

5. Record the sources of your answers to the following questions, and note any problems, or inadequacies in the information you find. Compare the answer in more than one source whenever possible.

(a) What is kitsch? What are its characteristics?

(b) What can you find out about the art of Sri Lanka? Where are the major museums?

(c) Who is Brett Whitely? When did he win the Sulman prize?

(d) Find the names and addresses of three Sydney libraries which specialize, or have important collections, in the visual arts.

6. List three major journals concerned with the visual arts. How much do they cost?

7. Find evaluative accounts of the life and artistic career of one of the following. Where could you see their work, and read more about them?

Vanessa Bell
Sidney Nolan
Leonard French
Pro Hart
David Hockney
Jackson Pollock
Henri Matisse
Wang Fu
Norman Lindsay
Giotto
Donatello
Eddie Puruntatameri
Deborah Niland

8. Find the best available book on an artist who interests you, and complete the following evaluation, indicating good/everage/poor for each feature. Give evidence to support your judgment.

   Authority:

   Up-to-dateness:

   Research on which book is based:

   Choice and number of illustrations:

   Bibliography:

   What is the intended audience (e.g. specialist, lay)?
   Would you buy the book yourself? For a library?
   On what grounds do you judge it to be the best on the subject?

9. Find references to two journal articles on one of the following subjects. What kind of reader do you think each would be suitable for (e.g. specialist or layperson)? Where in Sydney could you obtain the articles?

   American impressionist painting
   Australian aboriginal art
   Photography as an art form
   Women painters
   Children and art
   'Blue poles'
   Investing in art
   Art as therapy
   Henry Moore

10. (a) Define music in no more than 30 words.

    (b) List as many kinds of music as you can. Group them into categories.

11. Why is music often considered as a separate subject from others in the fine arts? Are there characteristics of its information resources and their use, which justify the distinction? List any of these characteristics you consider relevant.

12. The scene is a public library in a disadvantaged inner-Melbourne area. The community includes large proportions of Aboriginals, Greeks, Italians and Yugoslavs, with many smaller ethnic groups. There is a high incidence of single parent families and social problems. There are also considerable numbers of younger, affluent people who typically live in renovated terraces and are connected with the nearby University. The library has a large record collection, but no tapes. The records are arranged in two groups, of about the same size, labelled 'Fine music' and 'Ethnic music'. There is also a small selection of jazz and country music, but no popular music or rock. All the records are from reputable producers like Deutsche Grammophon: there are no budget records. Music is played constantly on the library's own very good equipment: the choice is that of the librarian on duty, who usually seems to favour 'fine' music. The library prides itself on maintaining the records in good condition, and lends only to those whose record playing equipment is of the required standard.

Is this library applying appropriate selection criteria? What criteria would you apply and what changes would you make, if any?

13. In answering the following questions, record your sources, and any problems, or inadequacies in the answers you find. Compare the answer in several sources whenever possible.

(a) What is a Jew's harp? What is the history of the instrument?

(b) Where can I find the names and addresses of instrument makers in Australia? Who makes violins in N.S.W.?

(c) What is a lute? Find illustrations of the kind of lute played in Renaissance Europe.

(d) Find an evaluative account of the work of Martin Wesley-Smith. Has he made any recordings?

(e) Who wrote "All things depart."? What are the words to the song?

(f) Who wrote "Old MacDonald had a farm?" Where is the music published?

III. LAW

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1. OBJECTIVES

When you have finished this segment, you should be able to answer or discuss questions such as these:

i. What is law all about?

ii. Where did Australian law originate?

iii. What constitutes primary sources of law?

iv. How does legislation come into being?

v. What are the sources of information concerning legislation?

vi. What are the major characteristics of case law?

vii. What are the major sources of case law?

viii. What constitutes secondary information resources in law?

ix. What are some examples of secondary legal information resources?

x. What computerized legal information resources are available?

xi. What type of law resources do ordinary people need?

In addition, you should also have acquired certain skills, in particular:

i. identify the components of an act or case.

ii. locate acts and cases relevant to a given situation.

iii. locate amendments to acts, and the current status of legislation.

iv. identify and select secondary information resources appropriate to particular enquiries or problems.

v. use legal information resources effectively, particularly Halsbury's laws of England and the Australian digest.

2. DEFINING LAW

Before considering the nature of legal information, there must be some knowledge of the law itself, and of the structures which are responsible for making and enforcing the law.

Definitions can contribute to an understanding of the areas of concern to the law. Some definitions and descriptions are:-

> "Law: the body of rules, whether formally enacted or customary, which a state or community recognizes as binding on its members or subjects." THE SHORTER OXFORD ENGLISH DICTIONARY.
>
> "Law is a general term embracing all those principles, rules and enactments which are applied in the courts and enforced by the coercive power of the state." ENCYCLOPEDIA AMERICANA, (1968).
>
> "Law: one of the most significant expressions of a nation's social and political development..." ENCYCLOPAEDIA BRITANNICA (1965)
>
> "Law is the product of man's capacity to reason, and consists of all those principles and rules, which, by use of reason, can be seen to be necessary for, or which can be seen to promote, man's peaceful and happy life in society.."
> Paraphrase by Derham, et. al. INTRODUCTION TO LAW, p.184.
>
> "Law is the instrument man uses in his attempt to achieve justice in society."
> Paraphrase by Derham, et. al. INTRODUCTION TO LAW, p.184.
>
> "Law = those rules which will be recognized by the courts."
> Chisholm & Nettheim. UNDERSTANDING LAW, p.6.
>
> "Law is a social institution, and reflects the society in which it operates."
> Chisholm & Nettheim. UNDERSTANDING LAW, p.4.
>
> "Law: a system of rules imposed by the supreme authority in a politically organized society, and recognized by the members of that society as governing or regulating their conduct..." BAALMAN's OUTLINE OF LAW IN AUSTRALIA, p.1.
>
> "Law, according to an ancient maxim, is good sense, and what is contrary to good sense is not good law." BURKE v. STATE 119 N.Y.S. 1089.

3. ORIGINS OF AUSTRALIAN LAW

Today, many of our new laws and changes to the law are stimulated by developments in other countries, particularly the U.S. and the U.K. But Australian law as it is today is firmly based on the English tradition. Blackstone, an 18th century lawyer, provided insight into the basic reason for this when he cited an accepted principle of his day:

> If an uninhabited country be discovered and planted by English subjects, all the English laws then in being which are the birthright of every subject, are immediately then in force.

Imperial legislation decreed that New South Wales, Victoria, Queensland and Tasmania would receive English law as it existed in 1828. Western Australia would receive English law as it existed in 1829, while South Australia would receive it as it existed in 1836. What each colony did with this received law was the business of its local legislature. Any change occurring in England to the law after these dates was not automatically accepted by the colonies.

This system proved workable because between 1850 and 1890, the colonies were granted local self government under Constitution Acts passed by the Imperial Parliament. These Acts allowed each local government to pass laws pertaining to its own territory. However, an Imperial Act, said to apply by 'paramount force', could still override any colonial Act.

Under the Imperial Commonwealth of Australia Constitution Act of 1900, the colonies were federated. Each became a State maintaining its original constitution. In addition, a new centralised government, the Commonwealth, was created. Many powers were granted to both the Commonwealth and the States concurrently. In case of a conflict between two statutes, the Commonwealth Act would override the State Act. An example of how this system operates can be illustrated by the divorce law. Until 1959, each State had its own statute. However, in 1961 when the Commonwealth Matrimonial Causes Act 1959 took effect, all State Acts regarding divorce ceased to operate. (Note that in 1976 the Family Law Act 1975 replaced the earlier Commonwealth Act.)

Imperial lawmaking with regard to Australia was curtailed by the Statute of Westminster in 1931. After a conference of self-governing members of the British Commonwealth of Nations with the United Kingdom Government, a decision was reached that the Acts of the United Kingdom would not apply to dominions unless they requested and consented to such legislation. Nonetheless, a few Imperial Acts still have force in Australia today.

4. PRIMARY SOURCES OF LAW

Legal materials may be divided into two broad categories: primary and secondary sources. The primary sources consist of the authoritative records of the law made by the law-making authorities and the secondary sources comprise all other legal materials.

The two primary sources of law are:

> Legislation consisting of Acts, regulations, orders-in-council, ordinances, statutory rules, and by-laws enacted by Parliament and/or its delegated bodies
>
> and
>
> Interpretation of court cases which is called case law or judge-made law.

4.1 Legislation

4.1.1. Bills

The draft of a proposed Act of Parliament is a Bill. When it has been passed by Parliament and given the Royal assent by the Governor-General or the Governor, the Bill becomes an Act of Parliament. Statute is a term which is used interchangeably with Act.

There are many ways in which a Bill may originate. It may come from:

- the cabinet
- a government department at the suggestion of a senior member of the Public Service Board
- a political party

  An example is the Petroleum and Minerals Authority Bill 1973. The late Rex Connor, moving the second reading in the House of Representatives said the Bill was based on the policy of the Government "as enunciated first by the... Australian Labor Party."
- a Law Reform Commission

  For example, recommendations made in the Australian Law Reform Commission's Report Criminal Investigation were contained in the N.S.W. Parliament's Bail Bill, 1978.
- various pressure groups including business
- Royal Commissions, Committees of Inquiry, Parliamentary Standing or Select Committees

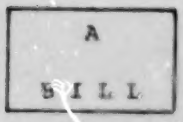
  For example, the Commonwealth's Family Law Bill, 1973, was introduced following an inquiry by the Senate Standing Committee on Constitutional and Legal Affairs.
- an individual Member of Parliament

  An example is the Medical Practice Clarification Bill, 1973, presented by Mr. McKenzie in the House of Representatives on 10 May, 1973.

No matter how the Bill begins, to have a chance of succeeding it must usually be supported by the Cabinet, firstly because the Government has the most votes and secondly because the Cabinet is responsible for ordering the business of Parliament. If they support the Bill it is more likely to get a place in the schedule. The Medical Practice Clarification Bill, like most private members' Bill, did not become an Act.

How a bill becomes an act

A bill's progress through Parliament and the debate on it is recorded in Parliamentary Debates, commonly referred to as Hansard. Each Parliament in Australia except Tasmania, publishes a record of its debates.



is usually prepared by the Parliamentary Draftsman at the request of Government

Bill introduced into House of Parliament by appointed minister

FIRST READING: Clerk of House reads title; a formal motion moved that bill be read a first time and printed. No debate. If motion passed, date set for second reading.

SECOND READING: Full debate focusing on explanation, appreciation or criticism of general principles of Bill. No amendments made. If House passes motion for SECOND READING, Bill referred to Committee of Whole House or to a Select or Standing Committee where Bill receives thorough clause-by-clause scrutiny & amendments debated. After all parts approved in Committee, it is 'reported' to the House. Debate to accept or reject with or without amendments.

THIRD READING: Debate concentrates on general principles. No major amendments accepted. If motion for THIRD READING carried, Bill has passed House

Bill goes to other HOUSE where a similar process occurs

OR

If both Houses have passed it

Bill goes for Royal Assent by Governor-General or Governor.

When Royal Assent given Bill becomes

AN ACT

* Adapted from:
Derham, et. al. AN INTRODUCTION TO LAW, p. 28

When both Houses pass a Bill it becomes an Act or statute. However, on occasion the Houses have not concurred on passage of a Bill. When this happens both Houses appoint a small number of their Members to serve as managers. These representatives meet and try to resolve differences. The resulting Bill may not resemble the original Bill considered. In 1975, Appropriation Bills did not pass through the Houses of Parliament. As a result the Commonwealth Parliament was dissolved and the Whitlam government lost power.

The following are sources of information on Bills before Parliament.

Australian current law. 348.94046 AUST

Section 03 consists of monthly lists of Bills from Federal and State Parliaments. These lists do not cumulate.

Law Society of N.S.W. Library. Legislative reference service (included in the Law Society Journal).

Gives detailed information on the progress of bills through both Federal and N.S.W. Parliaments.

4.1.2. Acts

Even when a bill has become an Act by passing through all the necessary stages in Parliament, it does not become part of the law of the land until it comes into force.

An Act itself may specifically cite the day on which it will take force. When it does not, it is usual for the Act to take effect on the day it receives the Royal assent. This differs for an Act of Parliament of the Commonwealth, however, which takes force on the 28th day after it receives Royal assent if no specific date is affixed.

When dates appear in an Act they are given in square brackets following the long title as shown in the following example:

An Act to amend the WOOL TAX ASSESSMENT ACT 1936-1961, as amended by the WOOL TAX ASSESSMENT ACT 1962 [Assented to 28th May, 1962] [Date of commencement, 25th June, 1962]

Parliament has power to assign any date for an Act to come into effect: a day before the Act even passed Parliament (retrospective Act) or a day much later than the Royal assent. As an example of the former, a Commonwealth Act, the Bounty (Drilling Bits) Act 1980 was assented to 8 May 1980, but deemed to have come into operation on 1 October 1979. As an example of the latter, another Commonwealth Act, the Administrative Decisions (Judicial Review) Act 1977 which received Royal assent on 16 June 1977, came into operation on 1 October 1980.

Various sections of an Act may also be given different dates for taking effect. An alternative to citing specific dates is stating in the Act that certain sections of the Act as a whole will come into effect on a date to be proclaimed in the appropriate Gazette.

The Federal and all State governments issue official gazettes. The Federal publication is entitled Commonwealth of Australia gazette, the New South Wales publication is New South Wales government gazette (354.9440006 NEW 1).

Acts may be altered or amended by later Acts (which need not have the same title as the original Act). The original Act is referred to as the principal Act; the newer Act as the amending Act. When an Act has been amended many times it becomes difficult to follow. To minimize confusion, the government may reprint the Act incorporating all the subsequent amendments. This is known as a consolidation or reprint.

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4.1.2.1 Examining a Specific Act

An Act will contain the following elements:

1. number
2. long title
3. enacting words
4. short title
5. date on which Act comes into force (this may have the marginal note: Commencement).

Roads Grants Act 1980

(1) No. 106 of 1980

---

(2) An Act to grant financial assistance to the States and to the Northern Territory in relation to roads

[Assented to 6 June 1980]

(3) BE IT ENACTED by the Queen, and the Senate and the House of Representatives of the Commonwealth of Australia, as follows:

PART I—PRELIMINARY

(4) Short title

1. This Act may be cited as the *Roads Grants Act* 1980.

Commencement

(5) 2. This Act shall come into operation on the day on which it receives the Royal Assent.

(7) Interpretation

3. (1) In this Act, unless the contrary intention appears—

"arterial road" means an urban arterial road or a rural arterial road;

"construction", in relation to a road, includes—

(a) the reconstruction or realignment of the road;

(b) the bringing of the road to a higher standard;

It may also contain

6. preamble: this sets out the reasons for making the Act
8. schedules: these contain details which are more conveniently set out at the end of the Act than in the body of the Act.

Longer Acts may have a table of contents (or provisions). This may be divided into parts which may be subdivided into divisions.

All Acts are divided into numbered sections which may be subdivided into subsections and paragraphs.

Abbreviations

Part	pt
Section	s. or s
Sections	ss. or ss

4.1.2.2 Federal Acts

The following are sources of Federal Acts of Parliament:

Australia. Parliament. Acts of the Australian Parliament, 1901-1973. 12v. 348.9402 AUS 1-12

This contains the Acts of the Federal Parliament from 1901-1973, together with their amendments. This is known as a consolidation.

Australia. Parliament. Acts of the Parliament of the Commonwealth of Australia. Annual bound volumes, loose-leaf for the current year. 348.94022 AUS 2

Australia. Parliament. Acts of the Parliament: Commonwealth of Australia. Reprint series. 348.9402 AUST

Reprinted (consolidated) Acts are now being issued in pamphlet form. Up to the end of 1980 over 100 have appeared.

Sources of information on Federal Acts of Parliament

In addition to the Acts themselves, the following are sources of information about Acts and their amendments.

Annotations to Acts and Regulations of the Australian Parliament. Sydney, Butterworths, 1979- 348.94022 ANNO

A loose-leaf service which lists new Acts, regulations and proclamation dates, as well as annotating amendments to Acts passed since the 1901-1973 consolidation.

Australia. Parliament. Acts of the Parliament of the Commonwealth. 348.94022 AUS 2

The current year's loose-leaf volume contains the 'Acts Tables' which are cumulated monthly and list Federal Acts with their commencement dates.

Australian current law. 348.94046 AUST

Section 02 (01 prior to 1981) has an 'Index of statutory information' which lists Federal and State Acts. It also has a separate listing of proclamation dates.

Australian legal monthly digest. 348.94005 AUS 1

Contains a list which cumulates monthly, of 'Acts amended, repealed, proclaimed ... during the year.'

Law Society of N.S.W. Library. Legislative reference service has a section entitled 'Proclamations - Commencement of Acts' for both Commonwealth and N.S.W. Acts.

There is a subject index to Australain Acts:

WICKS, B.M. Subject index to Acts of the Parliament of the Commonwealth of Australia. Canberra, Libra Books. Updated annually. 348.94022 AUS 2

Finding the latest amendments to a Federal Act:

1. If you know the name of the Act -

   a. Check whether the Act has been reprinted (348.9402 AUST). If this is the case then all amendments are included up to the date shown on the cover.

   b. If the Act has not been reprinted, go to the 1901-1973 consolidation (348.9402 AUS 1-12). All amendments will be included up to 1973.

   c. Then for later amendments either look in Annotations to Acts and Regulations of the Australian Parliament (348.94022 ANNO) or check the annual volumes of the Acts of the Parliament of Australia (348.94022 AUS 2) from the date of the reprint or consolidation.

   d. Then update further, if necessary, by looking in Australian current law (348.94046 AUST) Section 02 (01 prior to 1981) Index of Statutory Information or Australian legal monthly digest (348.94005 AUS 1), consulting the 'Table of Acts amended, repealed, proclaimed, ...' in the latest issue of each year only.

2. If you con't know the name of the Act, use a subject approach to find the name of the Act.

   a. Use Wicks.

   b. Consult a legal encyclopedia (see p. 75 or the Australian digest (348.94046 AUST).

   c. Text books can also be useful as they usually refer to the relevant acts in the area being discussed.

4.1.2.3 New South Wales Acts

The following are sources of Acts of the N.S.W. Parliament:

N.S.W. Parliament. Public acts of New South Wales, 1824-1957. 15 vols., three permanent supplements, 1958-1973. — 348.944023 NEW 15-32

This is a consolidation, and is commonly known as the 'Red Statutes'.

N.S.W. Parliament. Statutes of N.S.W. — 348.944022 NEW 1

Annual bound volumes, loose-leaf for current year.

N.S.W. Parliament. New South Wales statutes. Reprint series. In loose-leaf form these are also consolidated and have largely superseded the Red Statutes. — 348.944022 NEW 3

Sources of information on N.S.W. Acts

In addition to the Acts themselves, the following are sources of information about N.S.W. Acts and their Amendments.

Annotations to the N.S.W. Statutes, with regulations. Sydney, Butterworths, 1980- — 348.944022 ANNO

A loose-leaf service which has a list of Acts currently in force (including all Amendments). For every reprinted Act there is a list of all amendments passed since the last reprint.

Australian current law. — 348.94046 AUST

See page 64 for explanation.

Australian legal monthly digest. — 348.94005 AUS 1

See page 64 for explanation.

Law Society of N.S.W. Library. Legislative reference service.

See page 64 for explanation.

N.S.W. Parliament. Alphabetical and chronological tables of N.S.W. statutes, 1824-1969: supplement 1970-1978. — 348.944028 NEW 1-2

This is an index to all Acts of the N.S.W. Parliament between 1824-1978 listing all the amendments.

Finding the latest amendment to a N.S.W. Act:

1. If you know the name of the Act -

   a. Check whether the Act has been reprinted (348.944022 NEW 3). If this is the case, then all the amendments are included up to the date shown on the cover.

   b. If the Act has not been reprinted

      either consult the Public Acts of N.S.W., 1824-1957 and the supplements (348.944023 NEW 15-32);

      or consult the Alphabetical and chronological tables of the N.S.W. Statutes (348.944028 NEW 1-2).

   c. Then for later amendments

      either look in Annotations to the N.S.W. Statutes (348.944022 ANNO) in section entitled Acts in force

      or check the annual volumes of Statutes of N.S.W. (348.944022 NEW 1).

   d. Update further by looking in Australian current law (348.94046 AUST) or Australian legal monthly digest (348.94005 AUS 1).

2. If you don't know the name of the Act, use a subject approach to find the name of the Act.

   a. There is no current subject index to N.S.W. Acts. The Alphabetical and chronological tables of N.S.W. Statutes (348.944028 NEW 1-2) has an alphabetical listing by short titles of the acts which has some cross references (covers 1824-1978).

      There is a 3 volume subject index to the Public Acts of N.S.W. 1824-1957. (348.944023 NEW 15-29).

   b. Consult the Australian digest (348.94046 AUST), a text book in the area or a handbook such as the Legal resources book (N.S.W.) (R340.09944 LEGA).

4.1.3. Subordinate Legislation

Parliaments pass Acts or statutes which become law. Often the statutes are general in nature and give authority to some other body to enact specific regulations, orders-in-council, ordinances, statutory rules, and by-laws to facilitate the effective operation of the Act. These regulations, orders-in-council, etc., are called delegated or subordinate legislation.

Federal statutory rules are contained in:

Australia. Parliament. Statutory rules made under Acts of the Parliament of the Commonwealth of Australia.	348.94025 AUS 2

These are annual volumes.

A reprint (consolidation) of statutory rules was begun in 1980 (348.94025 AUST).

N.S.W. regulations are printed in full in the N.S.W. government gazette (354.9440006 NEW 1). Annual volumes are also issued:

N.S.W. Parliament. Rules, regulations, by-laws, ordinances, etc.	348.944025 NEW 1

"MORE RULES AND REGULATIONS!"

Source: Lawtalk, v. 83, 14 September, 1978.

4.2 CASE LAW

4.2.1 History of Case Law

Case law was previously mentioned as the second main source of law (p.60). To understand its significance in Australia, it is necessary to trace its historical development in the Common Law of England. Before the 13th Century, custom was the key to deciding most issues. At the time of the Norman Conquest, for example, communal tribunals called moots met in the open air to determine issues of custom within their territories. Even later when cases came before King's justices, custom was examined in determining rulings unless a specific statute could be cited. Justices believed that the same principles should apply uniformly in all areas of the country. Thus, local customs were eventually modified into a set of standard rules. In other words, law was made 'common' to all. When any new situation arose, judges normally tried to apply the most appropriate customary rule available.

Eventually, by this means, a settled and fairly rigid set of rules, known as 'common law' developed. The strict application of these rules by the common law courts led to dissatisfaction and many unsuccessful litigants petitioned the King for justice. These petitions were referred by the King to the Lord Chancellor, who dealt with them according to the principles of good faith and fairness rather than the strict rules of common law. But because the Chancellor, like the common law judges, considered that similar cases should receive similar treatment, he too developed a settled body of rules. The new body of law, known as 'equity', was administered by the Court of Chancery, which was set up when the petitions to the Chancellor became too numerous for his to deal with alone.

The two bodies of law, equity (administered by the Court of Chancery) and the common law (administered by common law courts), coexisted side by side in England and were carried over into the Australian system. Both common law and equity are now administered by a single court system, both in England and in the Australian jurisdictions.

In short, common law can have several meanings depending on the context in which it is used. Among them are:

(1) That part of English law "formulated, developed and administered by old common law courts, based originally on the common customs of the country,and unwritten." (Osborn. A CONCISE LAW DICTIONARY, 5th ed., p.71)

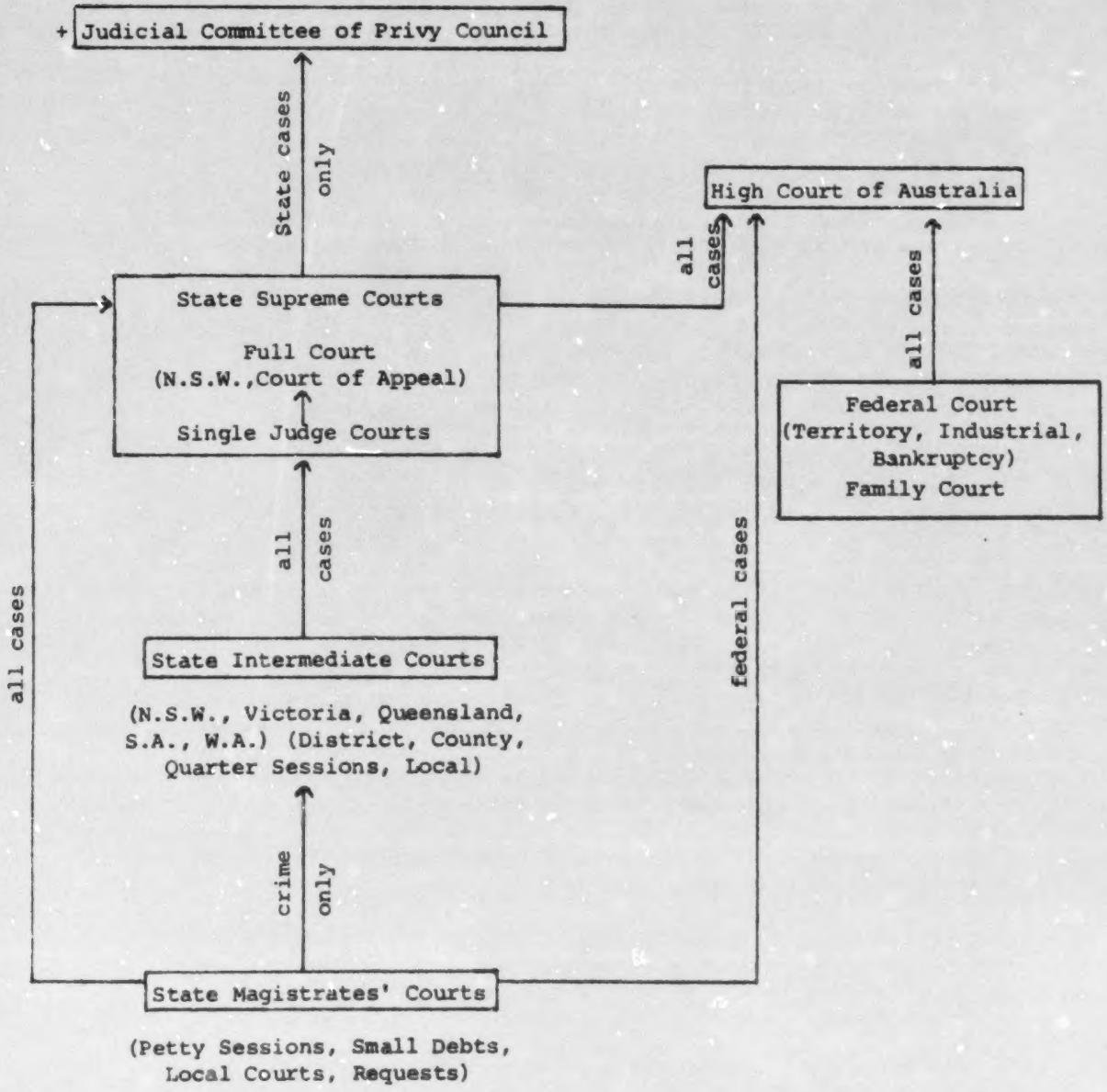
(2) Common law - as distinct from equity or statute law (and others).

(3) Common law - in specific situations used as a synonym for case law.

From the earliest days written reports were preserved to enable easy access to past cases. Initially these reports did little more than list the litigants' pleas and note decisions. However, by the reign of Edward I, Year Books reported cases more extensively, often giving the judge's reasons for decisions. Another significant development was the creation in 1865 of an Official Council of Law Reporting responsible for publishing all cases of legal interest in England. Even today some series of law reports are regarded as more 'official' than others.

4.2.2. The Australian Court System

The following diagram outlines the relationships and hierarchies of the Australian court system.



* Diagram from:

Sawer. THE AUSTRALIAN & THE LAW, p. 31, with modifications to account for recent decisions regarding appeal to Privy Council

\+ Judicial Committee of Privy Council: a court which sits in London to hear cases from Commonwealth countries

4.2.3. Doctrine of Precedent

It has been noted that basic to both English and Australian law is the idea that similar cases should be treated in a similar manner. Three reasons for this are: (1) fairness and equality; (2) speed and decisiveness; and (3) a degree of uniformity in decision making.

This principle is central to the doctrine of precedent which holds that a court is bound to follow decisions of courts higher than itself in a judicial hierarchy. Also, 'highly persuasive' are its own previous decisions and those of courts at the same level.

In attempting to establish a binding precedent for a specific case being argued, a barrister must seek the 'ratio decidendi' (rule of law or reason for deciding) which is stated and, in some cases, not overtly stated, by the judge in the case being cited. Any peripheral comments made by the judge in the course of his reasoning are regarded as 'obiter dictum' or 'said by the way' and are not held to be binding on a later case.

Consider the following example which illustrates precedent:

LAW: It is illegal for a person to be drunk while driving a vehicle.

CASE I: Archy A. is arrested and brought to the District Court for riding a bicycle while drunk. The judge must determine if 'vehicle' includes 'bicycle'. The judge rules to include bicycle in the definition.
Archy A. is punished accordingly.

CASE II: A year later a different judge in a Magistrates' Court (a lower court in the same jurisdiction) hears a case in which Bryan B. appears in court charged with drunken driving while riding a bicycle. The judge cites CASE I as a binding precedent. He believes that both cases are alike in all particulars, therefore, he is bound by the previous decision. Thus, Bryan B. is punished.

4.2.4. Law Reports

A barrister arguing a case in court needs to be fully aware of the details of other cases of a similar nature which might serve as precedents. Law reports help the barrister do this.

Law reports are found in series which cover all significant decisions in the superior courts of both the States and the Commonwealth of Australia. Different series cover varying jurisdictions, although there may be some overlap. If a case is reported in more than one series, the more highly respected series is always cited. For example, in Australia COMMONWEALTH LAW REPORTS is held in highest regard. Thus, this series is always cited as the source of a case when possible.

The process of generating each separate report involves a court reporter making a detailed transcript of the proceedings which a barrister then edits to the basics, namely: parties, nature of pleadings, essential facts, arguments, decision, and grounds for judgment. A law report is not valid unless the barrister who edited it includes his initials at the end of the report.

Law report series are said to be 'authorised' if judges read through their decisions following the editing by the barristers. In Australia COMMONWEALTH LAW REPORTS is an example of an 'authorised' law report series, while AUSTRALIAN LAW REPORTS is not. Note that both report cases from the same jurisdiction. The 'authorised' reports are not published as quickly as the others. Thus, it is useful to have both series.

Some Important Law Report Series

Commonwealth law reports. 1903- . — 348.94044 COM 1

Reports High Court and Privy Council cases. Abbreviated CLR

Australian law reports. 1973- . — 348.94041 AUST

Reports High Court, Privy Council, State Supreme Courts exercising federal jurisdiction, Federal Courts and selected others. Abbreviated ALR

New South Wales law reports, 1971- . — 348.944043 NEW 1

There are also many series covering particular subjects, e.g.

Australian tax reports — 343.94052 AUS 1

Examining A Specific Law Report

Information provided in most law reports includes the following:

- Title of litigation
- Court
- Judge
- Date
- Catchwords
- Headnote which summarises case

The elements of this are: a summary of judgment, beginning with "held" with the most common factor being noted by words - "per curiam"

Any dissenting opinions; cases may be listed which were followed (i.e. applied and approved), distinguished (i.e. not found to be sufficiently similar), and over-ruled (i.e. held to be incorrect so not followed)

Statement of facts which sometimes gives barristers' names and synopses of arguments

When judgment delayed to another day, the phrase "Cur. adv. vult." appears

- Court's judgment

  This section not given in full, but what does appear is quoted in exact words of court. Gives reasoning. At end of judgment, court makes ORDER concerning case.

- Solicitors' names

- Barristers' name who edited report

Different case reports may include these components in a different sequence.

Citing Cases

When reference is made to a law report, the citation will be similar to the following:

Commonwealth v. Cooper (1963) 107 C.L.R. 392

The name of the case is given first, sometimes followed by the date of the volume. If the date is necessary in identifying the volume, it is given in square brackets. [1963]. If not, it is just given in rounded brackets, (1963). The volume number then follows, if there is one. Finally the abbreviation for the law report series and the page number on which the case begins are given.

V. is not written in full as versus and is never said aloud. In civil cases, it is read as "and" and in criminal cases as "against".

Abbreviations

As we have seen, law reports are cited in a very abbreviated form. A number of resources contain lists of abbreviations such as Osborn, P.G. Concise law dictionary, p. 34 (R340.03 OSB 1), the Australian digest (349.94046 AUST), 2nd ed. v.1, p.xxv. In addition the KCAE Resources Centre has produced a leaflet entitled 'Abbreviations of law reports and journals'.

5. SECONDARY LEGAL INFORMATION RESOURCES

So far in this segment, both legislation and law reports have been examined. In law these official records of law-making authorities constitute PRIMARY SOURCES.

However, other publications, although not authoritative records, provide useful information to the librarian when dealing with legal topics. Dictionaries, encyclopedias, digests, loose-leaf services, indexing services, periodicals, and textbooks are all examples of SECONDARY SOURCES. These secondary sources are frequently used to obtain access to the primary sources.

The search for the legislation and case law on a topic is known as legal research.

5.1 Definitions of Legal Terms and Phrases

Clarification of the legal meanings of terms which in common usage mean something totally different is a valuable function of a legal dictionary.

BLACK, H.C. Black's law dictionary. 5th ed. St. Paul, Minn. West, 1979.	R340 BLAC
JOWITT, Earl. Dictionary of English law. 2nd ed. London, Sweet & Maxwell, 1977. 2 vols.	
MARANTELLI, S.E. The Australian legal dictionary. Melbourne, Hargreen, 1980.	R349.94 MARA
OSBORN, P.G. Concise law dictionary. 6th ed. London, Sweet & Maxwell, 1976.	R340.03 OSB 1
STROUD, F. Judicial dictionary. 4th ed. Andover, Hants, Sweet & Maxwell, 1976. 5 vols.	R340.0942 STR 3
WALKER, D. Oxford companion to law. Oxford, Clarendon Press, 1980.	R340 OXF

Another type of legal dictionary defines words and phrases as they have been interpreted by the courts. One such source is:

Words and phrases legally defined. 2nd ed. London, Butterworth, 1969- . 5 vols.	R340.03 WOR 1

5.2 Legal Encyclopedias

Legal research will usually involve the use of encyclopedias and digests. When searching for information on a topic, a general encyclopedia makes a good starting point. A legal encyclopedia serves the same role by providing a concise statement of the law on a particular topic. In addition, it cites relevant legislation and cases as authority.

The ideal encyclopedia should have

(1) a comprehensive statement of all relevant law

(2) citations to authorities relied upon (both legislation and cases)

(3) comprehensive analytical and subject indexes

(4) frequent supplements to update the main volumes.

In short, a legal encyclopedia can be thought of as an index to the whole body of the law. Your search through the law so far will illustrate how useful such an encyclopedia can be.

One such encyclopedia of English law is:

Halsbury's laws of England. 4th ed. London, Butterworths, 1973- , + Cumulative Supplement and Current Service.	348.42026 HAL 61-

Since 1907, it has aimed to provide a complete statement of English law by means of a series of connected treatises on all aspects of law written by subject experts. You can use it to find an exposition of the law of a subject and also to find references to the legislation and cases that are relevant to that subject.

Since the 4th edition of this work was begun in 1973, 32 volumes have been produced. Arrangement of subjects is alphabetical with an outline of contents included before each entry to provide a helpful overview. Until the 4th edition is complete, the 3rd edition must also be used.

The closest equivalent Australia has to a legal encyclopedia is:

Australian commentary on Halsbury's laws of England (4th ed.) Chatswood, Butterworths, 1974.	348.42026 HAL 122

The Commentary provides exposition of the statements of law in Halsbury's in the context of statute and case law in Australia. To date this series, edited by Sir Garfield Barwick, is very incomplete. It contains the Australian law only insofar as it differs from the English law, so it is necessary to use Halsbury's laws of England and the Commentary together.

Using Halsbury

1. To find the law on a topic in one of the main volumes of Halsbury's (always preferring a fourth edition to a third edition volume):

   (a) use the general index to the third edition, and the interim index to the fourth edition (the latter not held at KCAE).

(b) if you know the general subject area into which your topic falls, go directly to the volume which contains the appropriate title (chapter heading). Use the table of contents at the beginning of the title and/or the index at the back of the volume to find your topic.

Having found your topic by means of (a) and (b) note the title, and paragraph number which deals with your topic.

2. Update by following that title and paragraph number through the Cumulative Supplement and the Current Service.

3. To find the Australian law, follow the title and paragraph number through the Australian Commentary.

5.3 Legal Digests

Legal digests summarise and index cases on particular legal topics or points of law. They act, therefore, as indexes to law reports. Unlike encyclopedias, they do not attempt to summarise the law, or to interpret it authoritatively. The most comprehensive digest of English case law is:

The English and empire digest. London, Butterworths, 1919- . 348.42046 ENG

The first edition (1919-1938) has been superseded by replacement volumes which have a blue band on the spine. There is a consolidated table of cases, and a consolidated index to this series.

The volumes with a blue band on the spine ('replacement' volumes) are being superseded by volumes with a green band on the spine ('re-issue' volumes).

The major digest of Australian law is the Australian digest which consists of summaries of Australian cases and lists of relevant articles.

The Australian digest. 2nd ed. Sydney, Law Book Company, 1963- + Interim supplement. 348.94046 AUST

The 2nd edition of the Australian digest is not complete, so reference to the first edition (1925-1933, 1934-1947 and annual supplements) is still necessary.

The most recent cases are digested in

Australian legal monthly digest. Sydney, Law Book Co., 1947- . 348.94005 AUS 1

Using the Australian Digest

1. To find cases (and articles) on a topic in the main volumes of the Australian digest always preferring a second edition to a first edition, use -

   (a) the general index to the first edition. If you are referred to a title (chapter heading) which has been replaced by a second edition volume, then use the index at the back of that second edition volume. If the name of the title has been changed between the 1st and second edition, consult the list of titles in the Interim Supplement.

   (b) if you know the general subject area within which your topic falls, consult the volume which contains the appropriate title. Use the table of contents at the front of the title and/or the index at the back if it is a second edition volume.

   Note the volume number, title and square bracket number of a relevant case found by means of (a) or (b).

   (c) to find later cases and articles on your topic, since the second edition, follow the title and square bracket number through the Interim Supplement of the Australian digest and the latest issue of the Australian legal monthly digest.

   (d) to find later cases and articles on your topic since the first edition, follow the title and square bracket number through the latest Master volume of the Australian digest in the section 'Key (Cumulative)to cases' and the latest issue of the Australian legal monthly digest.

   Note that the references in the Interim Supplement and the Master volumes are to cases in the annual supplements.

2. If you want to follow up a particular case to make sure it is still good law, a process known as noting-up, you will need to do the following:

   (a) consult the 'Table of cases judicially considered' in volumes 24 and 29 of the 1st edition and all the Master volumes of the Australian digest.

   (b) For later cases after the latest Master volume, see Australian current law (348.94046 AUST) section 01, 'Cumulative table of cases judicially considered'.

The other publication which summarizes Australian court cases is:

Australian current law. Sydney, Butterworths, 1963- . Loose-leaf.	348.94046 AUST

Case Notes

Finding a case that is relevant to his topic is only the first part of a lawyer's task. He then has to interpret the case.

Short commentaries of significant cases, called case notes, usually appear soon after the cases are reported. Some publications which index case notes are:

Monash University case notes index. Microfiche.	R348.048 MONA
Current Australian and New Zealand legal literature index.	R016.34005 CUR 1
Index to legal periodicals.	R340.05 INDE 1
Current law citator.	

5.4 Standard Textbooks and Treatises

Students and practitioners of law make extensive use of textbooks and treatises which summarise and explain the laws of particular countries, or the law on particular topics. Reputable ones may go into many editions, still known by the name of the original author, even when the text has been revised by later editors. Most reputable textbooks are published by specialist legal publishers such as Butterworths, Sweet and Maxwell, The Law Book Co., C.C.H. Australia, etc.

Typical examples of legal textbooks are:

Paget's law of banking. 9th ed. by M. Megrah and F.R. Ryder. London, Butterworths, 1981.

CHESHIRE, G.C. and FIFOOT, C.H.S. The law of contract. 4th Australian ed. Sydney, Butterworths, 1981.

Snell's principles of equity. 27th ed., by R. Megarry and P.V. Baker. London, Sweet and Maxwell, 1973.

5.5 Legal Periodicals

In Australia there is an enormous range of legal periodicals put out by a great variety of legal groups. The Australian law journal is well known. In addition, most law schools publish their own law review. Usually these journals bear the name of the law school with which they are associated. Many of these include case reports.

A new periodical of interest to librarians is:

Legal reference services. New York, Howarth Press, 1981.	R340.05 LEGA

Law Reform Commission Publications

The Australian and State Law Reform Commissions publish a variety of discussion, issues, research and working papers and report on matters referred to them. The A.L.R.C.'s publication Reform contains information on the work of local and overseas law reform commissions. Australian Law Reform Commissions' reports are also listed in Australian current law.

5.6 Indexing Services

There are several legal indexing services, for example:

AGIS: current information service. Canberra, Attorney General's Dept., 1974. — R340.05 AGIS

Abstracts current journal articles for the legal officers in the Attorney General's Department.

Current Australian and New Zealand legal literature index. Sydney, Law Book Co., 1973- . — R016.34005 CUR 1

Current law index. Los Altos, Information Access Corporation, 1980- .

Indexes about 660 law and law related journals. Available in hard copy and on-line as part of the Legal resource index (see below)

Index to legal periodicals. N.Y., H.W. Wilson, 1908- . — R340.05 INDE

Legal resource index. Los Altos, Information Access Corporation, 1980- . (Available on microfiche and on-line only)

Includes Current law index but also indexes more general periodicals, newspapers and selected legal monographs.

Australian public affairs information service is also a useful source for articles on Australian legal topics. — R015.94 AUS 1

5.7 Computer-Based Legal Information Systems

In the U.S.A. computer-based legal research is available through, for example, the WESTLAW and LEXIS (Mead Data Corp.) services.

The Lexis U.S. data base covers statute and case law from the U.S. federal system and a number of U.S. States. The Lexis U.K. data base (available through Butterworths) contains reports and cases back to 1945, and U.K. statute law is at present being consolidated and will be put into the data base by subject areas such as tax, commercial law, etc. Butterworths are at present considering adding Australian data to the Lexis system and making it available in Australia.

The Legal resource index and the National criminal justice reference service have recently become available on-line.

In Australia the Federal Attorney-General's Department has a computerised data base, SCALE (Statutes, Cases Automated Legal Enquiry) which is, at present, only available at the Attorney-General's Department and State Parliamentary libraries, and appears unlikely to be made more widely available. To date, the system holds Commonwealth Statutes, A.C.T. Ordinances and the Commonwealth Law Reports, volumes 128-138. The Australian Institute of Criminology also has a data base CINCH (Computerized Information from National Criminological Holdings).

Sample print out

BEST COPY AVAILABLE

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****  STATUS  PRINT  ***        TIME  -  16-51-00    DATE  -  15-11-79    PAGE  -  1

USER IDENTITY    -  XGPOWSR
DATA BASE NAME   -  COMACT
PRINT REQUEST    -  T PRINT ALL

QUESTION         -  0 ABORIGIN*

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    1. THE CONSTITUTION - TABLE  OF  PROVISIONS

    2. THE CONSTITUTION - SECT. 51.

    3. THE CONSTITUTION - SECT. 127.

    4. THE CONSTITUTION - NOTES

    5. CONSTITUTION ALTERATION (ABORIGINALS) 1967

    6. CONSTITUTION ALTERATION (ABORIGINALS) 1967 - SECT. 1.

    7. CONSTITUTION ALTERATION (ABORIGINALS) 1967 - SECT. 2.

    8. CONSTITUTION ALTERATION (ABORIGINALS) 1967 - SECT. 3.

    9. CONSTITUTION ALTERATION (ABORIGINALS) 1967 - NOTE

   10. ABORIGINAL AFFAIRS (ARRANGEMENTS WITH THE STATES) ACT 1973

   11. ABORIGINAL AFFAIRS (ARRANGEMENTS WITH THE STATES) ACT 1973 - TABLE  OF
PROVISIONS

   12. ABORIGINAL AFFAIRS (ARRANGEMENTS WITH THE STATES) ACT 1973 - PREAMBLE

   13. ABORIGINAL AFFAIRS (ARRANGEMENTS WITH THE STATES) ACT 1973 - SECT. 1.

   14. ABORIGINAL AFFAIRS (ARRANGEMENTS WITH THE STATES) ACT 1973 - SECT. 2.
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The first page of a print out generated by SCALE. The search word was "Aborigin".

This sample demonstrates that the system searches each section of each Act for the key word. Wherever it appears, that section of the Act is noted.

5.8 Loose-Leaf Services

Loose-leaf services are designed to provide rapid updating and reporting of new developments in legal fields. Most concentrate on a particular aspect of the law, or a particular market. They aim to provide all the necessary legal information for that area or that market in a single convenient package. Some examples are:

Australian company law. Butterworths.	R346.9406605 AUS
Australian income tax law and practice. Butterworths	343.94052 MAN
Industrial arbitration service. Law Book Co.	344.940189 INDU

Australian family law and practice. CCH Australia.

This provides, as part of its service, complete updated copies of the Family Law Act 1975, Family Law Regulations and Social Services Act 1947.

6. LAW FOR ORDINARY PEOPLE

So far in these notes we have concentrated on the legal information resources used by practitioners and those studying and researching law. This emphasis has been necessary because the information resources used by professional lawyers are complex, and quite different from information resources encountered in other subjects. Also, printed information resources are vital to lawyers and students of law, constituting their most basic working tools.

However, ordinary citizens need access to legal information too. In recent years there has been an enormous growth in information resources which explain the law in terms which non-professionals can understand. There has also been a rapid growth of organizations which seek to help people with legal problems, and to make them aware of their legal rights. For example, there was a recent article entitled 'Choosing a lawyer' in the September 1980 issue of Choice.

A recent Sydney Morning Herald article, reproduced on the following pages, gives some indication of the range and activities of such organizations.

Where people can find free

MANY people, especially the young and the unemployed, believe themselves to be at a disadvantage when confronted with legal problems because they cannot afford legal advice or representation.

Their ignorance of the law and of the various free legal advice and legal aid organisations available, for consultation and representation, can sometimes exacerbate their problems.

"One of the worst things people can do is to receive a summons or fine through the mail, forget about it for a while and then turn up an hour before they are due in court and ask us to do something. Don't let your problem lie there, you've got to act on it right away," explained Mr Roger West, the co-ordinator at the Redfern Legal Centre.

The Redfern Legal Centre (at the Redfern Town Hall, 71-73 Pitt Street, Redfern, telephone 698 7277 – which includes a 24-hour emergency answering service) is an independent community legal centre, offering free advice and assistance with legal and financial problems to people who cannot afford a private solicitor and who do not qualify for other legal aid.

Of the people who use the resources of the centre, 60 per cent are unemployed, dependent on a husband, a wife, a child, or social welfare. Of that 60 per cent, 35 per cent rely directly on social security.

The centre is one of a network of community legal centres in the Sydney metropolitan area. It is funded mainly through State and Federal legal aid agencies, the Sydney City Council and proceeds from the sale of the *Legal Resources Book (NSW)*.

Other community legal centres are at Marrickville, Kingsford, Parramatta (the Macquarie Legal Centre), Darlinghurst (the Inner-City Legal Centre), and Lidcombe (which specialises in women's legal problems).

Mr West says the whole idea behind a community legal service is to bring a more client-oriented service. That is why there is a network of suburban offices and why Redfern provides a 24-hour emergency service.

The centre is open between 9 am and 9 pm, Monday to Friday, and solicitors are available for interviews between 6 pm and 9 pm. Interviews can be arranged for other times, but an appointment must be made.

The centre also provides financial counselling on a variety of money-related problems, such as credit, finance company problems and budgeting difficulties.

The centre also runs taxation advice sessions and, during the appropriate time of the year, they assist people to fill out their taxation forms.

The centre handles about 9,000 interviews and 15,000 telephone inquiries a year, which works out to about 35 interviews (including jail visits) and 60 telephone calls a day. Debbie Whitmont, a community lawyer at the centre, says the calls range from: "Where do I get my dog registered?" to "There are police outside my door, what should I do?"

This kind of activity keeps the centre's small full-time staff and the volunteer lawyers, law students, social workers and clerks quite busy.

"Our philosophy is to keep people out of court as far as it is possible. We'd much rather resolve a problem outside of the courts through mediating on our client's behalf. It's quicker, cheaper and generally produces a result people are more happy with. Court situations sometimes expose people, especially the young, to unnecessary trauma," said Mr West.

The centre holds the opinion that if people are capable and can cope with their own legal problems, so much the better. This is why the educational aspect of their work remains so important.

People are encouraged to come to the centre and use the resources available there. There are shelves full of information pamphlets on a variety of subjects and the staff there will always advise you what to do next if you get stuck or confused.

The centre also sends out groups of volunteer law students and legal helpers to visit various schools in the area explaining the process of the law, instructing the students how to cope with the police and how to understand lawyers.

Their efforts help to educate the students on aspects of the law, dispelling some of the most popular misconceptions and, hopefully, saving them a visit to a police station or to a court later in life.

Another aid to legal enlightenment is the *Legal Resources Book*, which is published by the centre. It is available for reference purposes at the centre and can also be found in many public libraries and at many other community advice organisations.

It is nearly 800 pages of non-jargon legal information and is written and checked by specialist barristers and solicitors. It covers marriage, divorce, motor accidents, leases, wills, police, courts, faulty goods and services, troublesome neighbours, debts, social security, tax, house buying and contains a section on how to change your name. It can be obtained through the Redfern Legal Centre and bookshops. It costs about $30 and is updated annually.

If legal advice is not enough and the problem requires more detailed representation, there are a number of possible alternatives:

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out of work legal help

● If people can afford a private solicitor – and this is determined by a means test – the centre will refer that person to a "reasonably priced" solicitor;
● If they qualify for legal aid, they are referred to the Australian Legal Aid Office, or the Public Solicitors Office;
● For some cases there is no legal aid available, for example, some tenancy cases and some domestic assault cases. Under these circumstances the full-time staff at the centre will usually become involved.

There is a separate Aboriginal Legal Service at 7 Botany Street, Redfern, telephone 699 5840 and 699 5849, which provides free legal advice and assistance in any matter to all people of Aboriginal descent. There are no means tests for this service and no contributions are required.

People seeking free legal advice can of course go directly to one of the Legal Aid Offices run by the Legal Services Commission of NSW (telephone numbers can be found under the NSW Government section at the start of the telephone directory).

The commission also operates a Duty Solicitor Scheme which provides full legal representation in all Children's Courts in NSW.

Each day "duty solicitors" attend the various Children's Courts and contact is established on the day of the trial or by prior appointment with the commission. The service is free and is not means tested.

The Law Society is another source of legal advice and people wishing to use their services should go through the society's Community Assistance Department.

If your problem comes under the Commonwealth's jurisdiction, such as social security, customs or immigration problems, legal aid can be provided by the Australian Legal Office (telephone number of the head office and branches can be found in the Commonwealth Government section in the front of the directory).

Chamber magistrate, or the clerk of petty sessions are another source of free legal advice, both found at your local court house.

To quote from the *Legal Resources Book:* "The help of chamber magistrates is often particularly valuable because as well as providing advice on how to handle a particular problem they can assist with more technical matters such as taking out a summons to commence a simple legal claim."

As a guide to what young people should do if they are arrested, the Marrickville Legal Centre and the South Sydney Womens' Centre have produced a pamphlet summarising their rights:
● Ask why you are being arrested;
● Give your name and address and your correct age;
● Ask a friend to stay with you at all times;
● Ask for bail;
● Find out the exact charge and then get a copy of the charge sheet and take it with you;
● Stay calm and report any threats or injuries immediately;
● Do not answer any other questions except your name and address;
● Sign nothing, say nothing and write nothing;
● Do not plead guilty until you have had advice from a lawyer;
● Do not talk until you have had legal advice.

Also, anybody under 18 who is arrested by the police and questioned has the right to have an independent person present at the questioning. If the person is over 16 and under 18 he has a right to choose an independent adult than one of his parents.

For readers over 25: "Session' in young people's slang can mean when a group shares marihuana.

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6.1 Some Examples of Legal Information Resources for Lay People

Family guide to Australian law. Sydney, Readers Digest, 1978.	R340.0994 FAM 1
FITZROY LEGAL SERVICE. Legal resources book. 2nd ed. Melbourne, 1978. Loose-leaf.	340.09945 LEGA
Legal resources book, N.S.W. Edited by M. Mobbs. Sydney, Redfern Legal Centre, 1978. Loose-leaf.	R340.09944 LEGA
Legal services directory: how and where to find your lawyer. Sydney, Law Society of N.S.W., 1981.	
VICTORIAN COUNCIL FOR CIVIL LIBERTIES. Your rights. Carlton, VCCL, 1980.	
WALLIS, Barry. You and the law in Australia: a layman's guide. Sydney, Rigby, 1979.	340.0994 WALL

7. BIBLIOGRAPHY

Guides to legal literature

CAMPBELL, E., GLASSON, E.J. and LAHORE, A. Legal research: materials and methods. 2nd ed. Sydney, Law Book Co., 1979. — R340.072 CAM 1 1979

An extremely useful work. Gives far more detail about legal resources than is possible in this handout.

JONES, G. and STONE, P. Law: a guide to select law sources in the Canberra College of Advanced Education Library. 4th ed. Canberra, 1982. — R340.016 JON

Kuring-gai College of Advanced Education Resources Centre. A guide to legal research and the legal materials held by the Resources Centre. [Sydney, 1980] — On shelf opposite circulation desk in library

PRICE, M.O. and BITNER, H. Effective legal research. 4th ed. Boston, Little, Brown, 1979.

Introductory Books on Law

CHISHOLM, Richard and NETTHEIM, Garth. Understanding law. Rev. ed. Sydney, Butterworths, 1978.

DERHAM, K.H., MAHER, F.K.H. and WALLER, P.L. An introduction to law. 3rd ed. Sydney, Law Book Co., 1977.

GIFFORD, K.H. How to understand an act of parliament. 4th ed. Sydney, Law Book Co., 1977.

SAWER, Geoffrey. The Australian and the law. Rev. ed. Ringwood, Victoria, Penguin, 1978.

WILLIAMS, Glanville. Learning the law. 10th ed. Sydney, Law Book Co., 1978.

8. STUDY QUESTIONS AND EXERCISES

1. Why do we have laws in our society?

2. (a) Take a copy of the (Commonwealth) Museum of Australia Act 1980.

(i) What is the number of the section which states when the Act comes into force?

(ii) When did the Act come into force?

From which of the elements listed above did you find this information?

(iii) Copy out s.6(1)(c).

(iv) Use the table of provisions to ascertain the position of the Museum with regard to copyright.

(v) For the purposes of this Act what does "Australian natural environment" mean?
In which section did you find this?
Which of the elements listed above does this section deal with?

(b) Take a copy of the (N.S.W.) Commercial Vessels Act, 1979.

(i) How many sections does this Act contain?

(ii) Does this Act contain any schedules?

(iii) Part II is entitled "Permits for Vessels and Motors". In this Act are hydrofoils regarded as vessels? Cite the section and subsection.

3. (a) What is the date of the Commonwealth Marriage Act?
What amendments to it have been passed?

(b) What is the date of the Commonwealth Racial Discrimination Act?
What amendments to it have been passed?

(c) What is the date of the Commonwealth Delivered Meals Subsidy Act? What amendments to it have been passed?

(d) What is the date of the N.S.W. Travel Agents Act?

(e) What is the date of the N.S.W. Anti-Discrimination Act? What amendments to it have been passed?

4. Choose a law report and label in pencil each of the items listed on pages 72 and 73.

5. Locate the following law reports; and give the name of the case cited.

(a) (1977) 137 C.L.R. 20.

(b) (1980) 2 N.S.W.L.R. 449.

6. (a) What legally is the difference between flotsam and jetsam?

(b) The names of many Australian companies are followed by Pty. Ltd. Why?

7. (a) Find a summary of the English law relating to aviation. How old must you be to pilot an aircraft?

(b) Find a summary of the English law relating to suicide. Is it an offence to commit suicide? What is the position in N.S.W.?

(c) Find a summary of the English law covering an owner's liability for his dog injuring another person. Is the N.S.W. law the same?

8. (a) List citations to Australian cases (including the most recent) which deal with the question of when a contract will be implied from the conduct of the parties.

(b) List citations to Australian cases (including the most recent) which bear on the question of whether workers' compensation payments will be paid for self-inflicted injuries?

(c) List citations to Australian cases (including the most recent) which deal with the legal consequences of an agent filling out a life insurance proposal.

9. (a) Locate all of the citations to the case of Sinclair, Scott and Co. Ltd. v. Naughton.

(b) What is the status of the case of Goulburn Valley Butter Factory Co. Ltd. v. Bank of N.S.W. (1900) 26 VLR 351?

10. (a) Locate three references to journal articles or books on Aborigines and the law.

(b) Locate three references to journal articles or books on the legal aspects of race discrimination in Australia and the United States.

(c) Find references to journal articles on the legal aspects of sterilization.

11. Using one of the loose-leaf services listed on p.82, cite two cases dealing with whether the liquidator of a company can carry on the business of the company. What is the applicable Act and Section?

12. (a) My application for an American Express credit card has been refused. Can I appeal, and if so, how?

(b) How can I find out if I'm eligible for Australian citizenship? How do I apply?

(c) I want to put up a fence between my land and my neighbour's, but he won't pay half. What can I do?

13. You are a reference librarian in a public library. A distraught woman comes in: her estranged husband has forcibly abducted their baby daughter, and the mother thinks he intends to take her out of Australia. She doesn't know what to do, or where to turn for help. What do you do? (It is 3.00 p.m. on a Sunday.)

IV. HISTORY

Outline of Segment

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1. OBJECTIVES

When you have completed this segment, you should be able to answer or discuss questions such as these:

i. What are some of the important characteristics of history as a discipline?

ii. What are some of the important characteristics of people who are engaged in history (whether for research, study, profit or pleasure)?

iii. What are some of the important types of information resource used by people who are interested in history?

iv. What are the major characteristics of these information resources, and how do they affect the way the resources are used?

v. What are some of the criteria to be taken into account in selecting or evaluating history information resources?

You should also have acquired certain skills, in particular:

i. Select appropriate information resources to answer effectively specific history questions.

ii. Use those resources effectively.

iii. Evaluate the information you find in those resources, and judge its appropriateness for particular users.

2. HISTORY: WHAT IS IT?

2.i. Definitions of history

Henry Ford thought that history was bunk. A lot of people and organizations obviously don't agree with him, for example:

- Publishers, who make money out of scholarly and popular history publishing
- Museums, which are increasingly popular. For example, plans for a multi-million dollar Museum of Australia, and small specialist and local museums all over the country
- Librarians, who find increasing use being made of historical collections
- Film, TV and radio producers, and the large audiences for Breaker Morant, Rush, The Sullivans, etc.
- The many amateur historians tracing their family trees
- Firms like Debretts, which make money out of helping people establish their ancestry.

History is several things. It is, firstly, the events of the past. Secondly it is the written or otherwise transmitted record of those events. Thirdly it is the body of techniques, methods and assumptions adopted by historians, those who discover, record and interpret past events.

Historians and others argue about whether history is a branch of the humanities or of the social sciences. Many people think it is both. In that it attempts to use 'scientific' methods to establish objective truth about the past, history is a social science. But historical facts do not speak for themselves: there is no history until the historian synthesizes and interprets the data he has collected. In this sense history is an art, and the historian is a creative writer.

History overlaps with many other disciplines, notably archaeology, anthropology, economics, sociology, politics, literature, law. Moreover history as a method is used by many other disciplines, and we have subdisciplines based on historical method, such as history of science, history of education, history of librarianship, military history, economic history.

Historiography is the writing of history: the different methods and conventions of historiography are a field of study in their own right. For example, narrative history, which uses a heightened literary style, rhetorical devices and even dialogue, was once the predominant style (e.g. Herodotus' History of Greece, Gibbon's Decline and fall of the Roman Empire, Macauley's History of England). Much modern historical writing uses an objective, scholarly style, though there are exceptions (e.g. 'history from below', some propagandist history, historical novels, dramatised documentaries).

Philosophy of history is the attempt to discover general principles which will explain the whole course of history. It is for example quite fashionable at the moment to interpret history according to Marxist, or feminist, philosophies.

2.ii. Categorizing history

History can be written, and studied, from a variety of viewpoints.

(a) History of a particular country, nation or civilization, e.g. Australian history, English history, European history. We need to be aware of biases in such history. Much 'world' history is the history of the western world, or written from a western viewpoint. 'Australian' history has been written almost entirely from the point of view of white, male Australians.

(b) History as a record of the actions, relations and conflicts of governments and their leaders, e.g. Australia under Menzies, England in the reign of Henry VIII, Hitler and World War II.

(c) The history of ideas, and of broad social, economic and political trends. This approach is a development mainly of the last hundred years, and cuts across the traditional national or political categories. E.g. the history of feudalism, the renaissance, colonization, socialism.

(d) Area studies link the history of a country or larger area with social, political, cultural, economic and geographic conditions. E.g. Asian studies, American studies.

(e) History from below interprets history in terms of the experience of ordinary individuals. Oral history, which records reminiscences of living people, is often associated with history from below, though it can also be concerned with the memories of leaders and elites. Social history tries to recreate the experience of ordinary people.

(f) Local history is the study of the history of a particular area or community. Many local historians are amateurs or hobby historians.

(g) Genealogy and the tracing of one's family history is becoming popular especially with amateur historians.

(h) It is traditional to categorize history by period. Some common broad divisions are

Prehistory	-	cave men, preliterate man
Ancient history	-	e.g. ancient Egypt, Babylonia, Greece and Rome
Medieval history	-	Europe from about 600 to about 1450 A.D.
Modern history	-	from the remaissance to the present

Australia:-

Early period - discovery and settlement
Colonial period - convict settlement, relations with England
Self government to federation
Twentieth century

2.iii. Reasons for writing, reading, or studying history

Some reasons for producing historical materials are

To record events for posterity
To instil civic pride and patriotism
Propaganda
To preserve and transmit culture
To interpret past events

People read or study history for many reasons - curiosity, vicarious experience, desire to learn lessons from the past, interpret the present, and forecast the future.

3. INFORMATION RESOURCES FOR HISTORY

3.i. Formats of historical evidence

The raw materials or evidence with which the historian works come in many formats. Some of the most commonly used are:

- Manuscripts and archives - records of individuals parishes, companies, societies, governments, etc.
- Oral records, e.g. tapes, cassettes
- Letters, diaries, memoirs
- Charts, atlases, maps
- Films, videotapes
- Official records such as transcripts of parliamentary proceedings, annual reports of government departments or firms, births, deaths and marriages, local govt. records
- Statistical data - demographic, economic, social etc., including computer data banks, censuses
- Newspapers and other records of day-to-day events
- Accounts of earlier historians, e.g. Greek and Roman writers
- Novels, poetry, songs
- Ephemera such as theatre programmes, advertisements, election manifestos etc.
- Paintings, photographs
- Archaeological sites, ruins, inscriptions
- Buildings, town plans
- Costumes, artifacts
- People's memories

3.ii. Formats of published history

Among the more common formats in which 'processed' historical information is published are

- General information resources, such as encyclopaedias, directories and yearbooks
- Monographs, varying from popular to scholarly, juvenile to adult, general to specific in coverage

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- Articles in scholarly journals
- Fictionalized accounts, e.g. historical novels, films, plays
- Documentary films and television programmes
- Tapes and records
- Paintings, drawings, illustrations
- Maps, charts and atlases

3.iii. Organizations which create, preserve or disseminate historical information

The list is enormous. Almost any organization would be able to provide some information about its own history. Types of organization which are especially concerned with historical information include:

(a) Museums. Collections of materials, general (e.g. Australian Museum) or specialized (e.g. Clocks Museum at Wellington, N.S.W., Tramway Museum at Loftus). Often hold lectures and other educational or informational activities. Often publish and sell historical books, journals, pamphlets, illustrations etc. Often have a library. Museums have as their aim the preservation of objects, primarily for historical reasons or because they are typical and representative. Museums classify and arrange exhibits, provide facilities to educate and extend knowledge as well as entertain.

(b) Libraries. e.g. State Libraries of N.S.W. and Victoria - important Australiana and state history collections. Public libraries - often have local history collections. Academic libraries.

The Australian National Library has some of the most important historical collections in Australia, including:

- Manuscript collections
- Film collection
- Paintings and photographs
- Oral history tapes

Libraries are often important in helping or teaching people to use historical materials - e.g. students, amateur historians, people tracing their ancestry.

(c) Archives. Preserve the unpublished records of

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business firms, trade unions, etc. etc. An important aspect of their work is indexing the contents of archives, to make the information they contain more accessible. The new federal Freedom of Information legislation will affect access to many government records.

(d) Research societies. e.g. Royal Australian Historical Society, Society of Genealogists, Oral History Society. Encourage communication of research, hold lectures and conferences, publish historical information resources, provide information services to specialists and general public. Often have libraries.

(e) Societies for amateurs. e.g. Local history societies, transport societies, ethnic societies. Hold meetings, field trips etc. Often publish historical information resources, have libraries.

(f) Commercial publishers. Popular and scholarly.

(g) Genealogical consultants. Trace ancestry for a fee.

(h) Universities and colleges. Teaching and research. Sometimes sponsor large projects, e.g.

James Cook University - Project to collect oral material on history of the Northern Territory

A.N.U. - Sponsoring the writing of the Australian Bicentenary histories.

May provide community courses. e.g. Sydney Teachers College has an evening course Writing family and local history. Universities have important history libraries.

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3.iv. Uses of historical information resources

Professional or academic historians use both the raw materials of history and the publications of other historians. Students use historical texts and monographs, but increasingly they also use raw materials for research and projects. The amateur historian may use the materials of scholarly research as a hobby, or with a purpose such as tracing a family tree. Many people read history in the form of fiction or biography. The bicentennial is generating a great deal if interest in Australian history. There are many publications being produced e.g.

Push from the bush: a bulletin of social history devoted to the year of grace, 1838. Canberra, 1838 Volume Collective of the Australian Bicentennial History, 1978- .	994.005 PUSH

People may pursue historical enquiries as a means to some other end. For example, the politician might use historical data to prove a point against the opposition, or the local action group to foster community identity; historical sources may be used in establishing property boundaries or claims to inheritances.

People are becoming more aware of the importance of film and other non-print resources as historical evidence, and as a way of communicating history. For example, someone writing a history of the 1940s in Australia would look at Movietone news films, and listen to records of radio broadcasts. Many people learn about history through television programmes like Rush and This fabulous century, or through radio features like Philip Geeves' session on City extra.

Family history has become exceedingly popular and many additional information resources are becoming available.

3.v. Selection and evaluation of historical information resources

The criteria used in evaluating published information resources in history are similar to those applied to information resources generally. In Information Resources I we listed them under the mnemonic APPARATUS.

The question of 'bias' is of particular significance in selecting historical material. History is interpretation, as well as fact finding. Consider for example the different interpretations you might find in American and Chinese histories of China, or in feminist and 'traditional' views of the role of women in history.

Selecting raw material for history presents special problems because often the future use and usefulness of a resource has to be estimated. For example, today's local newspaper or political handbill is not intended as an historical resource, but it may be valuable evidence for future historians. 'Selection' in this context often means deciding what to preserve.

4. TYPES OF INFORMATION RESOURCE AND THEIR USE

4. i. Introduction, overview, guides to the literature

Examples of information resources which may help you get started in search for historical information resources are

AMERICAN HISTORICAL ASSOCIATION. Guide to historical literature. New York, Macmillan, 1961.

POULTON, Helen J. The historian's handbook: a descriptive guide to reference works. Norman, University of Oklahoma Press, 1972. — 016.9 POUL

SHAFER, Robert Jones. A guide to historical method. Revised ed. Homewood, Dorsey, 1974. — 907.2 SHA 1

HEPWORTH, P. How to find out in history. Oxford, Pergamon, 1966. — 016.9 HEP 1

In addition, the sections on history in general guides such as WALFORD and SHEEHY will be useful. You should also consult Carl M. White's Sources of information in the social sciences, 2nd ed. (Chicago, A.L.A., 1973) and Henry Mayer's ARGAP: a research guide to Australian politics and cognate subjects (Melbourne, Cheshire, 1976).

4.ii Sources of brief factual information

Many factual questions in history relate to people, places, or events. Many such questions can be answered using general or national encyclopaedias, and these are a major information resource in history.

Examples of more specialized resources include

LANGER, William L. An encyclopedia of world history, ancient, medieval and modern, chronologically arranged. 5th ed. Boston, Houghton Mifflin, 1972. — R909.00202 LAN 1

HAMMOND, N.G.L. and H.H. SCULLARD, eds. The Oxford classical dictionary. 2nd ed. Oxford, Clarendon Press, 1970. — R 930.3 HAM

MORRIS, R.B. and J.B. Encyclopedia of American history. Bicentennial ed. New York, Harper and Row, 1976. — R 973.03 MORR

PALMER, A. The Penguin dictionary of twentieth century history. Hammondsworth, Penguin, 1979. — R909.8203 PENG

Dates are important in history, and there are various resources which deal specifically with dates and chronology, for example

STEINBERG, S.H. Historical tables, 58 B.C. - A.D. 1972. 9th ed. London, Macmillan, 1973. — R902.02 STE 1

Everyman's dictionary of dates. 6th ed., revised by A. Butler. London, Dent, 1971. — R 903 EVE 1

FREEMAN-GRENVILLE, G.S.P. Chronology of world history: a calendar of principal events from 3000 BC to AD 1973. London, Collings, 1975. — R902.02 FREE

Historical atlases are useful in answering questions relating to places and to political changes, for example

MUIR, R. Muir's historical atlas: ancient, medieval and modern. London, Philip, 1973. — Q911 MUI 1

SHEPHERD, W.R. Shepherd's historical atlas. 8th ed. London, Philip, 1973.

Biographical sources giving details of well-known historical figures include

Dictionary of national biography. London, O.U.P., 1917- . — R920.041 DIC 1

Australian dictionary of biography. Melbourne, Melbourne U.P., 1966- . — R920.094 AUS 1

Tracing one's ancestors has become very popular, and the assistance of librarians is frequently sought. The Society of Australian Genealogists is a helpful source of information, and has published a guide outlining procedures. Other examples of specialized resources in genealogy are

Burke's peerage and baronetage. London, Burke's Peerage. — R929.72 BUR 1

LEA-SCARLETT, Errol. Roots and branches: ancestry for Australians. Sydney, Collins, 1979. — 929.10994 LEAS

GRAY, Nancy. Compiling your family history: a guide to procedure. 6th ed. Sydney, Society of Australian Genealogists, 1979. — 929.20994 GRA (4th ed.)

Debrett's peerage and baronetage Australasian ed. 1980, London, Debretts Peerage, 1980. — R929.72 DEBR

4.iii. Manuscripts and Archives

A major activity for many historical researchers is locating relevant information in collections of unpublished documents. Guides to the whereabouts of such collections, and their contents, are therefore important information resources. Among the major Australian guides are

NATIONAL LIBRARY OF AUSTRALIA. Guide to collections of manuscripts relating to Australia. Canberra, 1965- . Looseleaf. — R016.0910994 NAT 1

ARCHIVES AUTHORITY OF NEW SOUTH WALES. Concise guide to the state archives of New South Wales. Sydney, 1970- . — R651.5609944 ARCH

MANDER-JONES, Phyllis. Manuscripts in the British Isles relating to Australia, New Zealand and the Pacific. Canberra, ANL, 1972. — R016.99 MAN 1

Mitchell Library. Catalogue of manuscripts of Australasia and the Pacific in the Mitchell Library. 2 v. Sydney, Trustees of the Public Library of New South Wales, 1967-1969. — R994 MITC 1-2

The most significant historical documents may be available in published collections, for example

CLARK, C.M.H., ed. Select documents in Australian history. Sydney, Angus and Robertson, 1950-55. Vol.1, 1788-1850; Vol.2, 1851-1900. — 994 C10.11

Historical records of Australia. 33 vols. Sydney, Library Committee of the Commonwealth Parliament, 1914-1925. — 994 HIS

Historical records of N.S.W., 1762-1811. 7v. Sydney, Government Printer, 1892-1901. (Reprinted 1978). — 994 HIST

English historical documents. London, Eyre and Spottiswoode, 1953- . — 941

COMMAGER, H.S. Documents of American history. 9th ed. New York, Appleton, 1973. Vol.1, to 1898; Vol.2, Since 1898. — 973.08 COM 2

A particular problem for Australian historians is that many of the relevant documents and archives are located in the United Kingdom. Many of these records have been microfilmed under the Australian Joint Copying Project, and are now available in a number of Australian libraries. The project, and the resources available, are described in

NATIONAL LIBRARY OF AUSTRALIA. Australian joint copying project handbook. Canberra, 1972- . — R994.0016 NAT

4.iv. Research in progress

Genealogical research directory. Australasian ed. Sydney, Library of Australian History, 1981- .

ORAL HISTORY ASSOCIATION OF AUSTRALIA. Directory. Mt. Pleasant, W.A., 1980- .

4.v. Standard histories

Standard histories are those which are so authoritative or so influential that anyone interested in the period or topic they cover is likely to use them.

Some standard histories are written by a number of experts, e.g.

Cambridge ancient history. Cambridge, C.U.P., 1923-39. 12 vols. and 5 vols. of plates.	930 C1-17
Cambridge mediaeval history. Cambridge, C.U.P., 1911-36. 8 vols.	940.1 CL-8
New Cambridge modern history. Cambridge, C.U.P., 1957- .	940.2 NEW

Others are one person's interpretation, e.g.

BLAINEY, G. The tyranny of distance. Melbourne, Macmillan, 1975.	330.994 BLA
CLARK, C.M.H. A history of Australia. Melbourne, Melbourne U.P., 1962-78. 4 vols.	994 C13-15
GREENWOOD, G. Australia: a social and political history. Sydney, Angus and Robertson, 1955.	994 G1
WARD, Russel. The Australian legend. Melbourne, O.U.P., 1958.	994.009 W1

Some standard histories are commissioned, for instance histories of business firms, schools, municipalities etc. Australia also has official histories of both world wars:

BEAN, C.E.W. The official history of Australia in the war of 1914-1918. Sydney, Angus and Robertson, 1923-42. 12 vols.	940.394 B1-12
Australia in the war of 1939-1945. Canberra, Australian War Memorial. Series 1, Army. Series 2, Navy. Series 3, Air. Series 4, Civil. Series 5, Medical.	Some vols at 940.5394 HAS and 940.542 L5-6 M5

In evaluating standard histories, you should consider questions like these:

- Who wrote it? (e.g. Individual or panel, expert or professional writer)
- Why was it written? (e.g. Critical analysis or uncritical celebration)
- Who is it intended for? (e.g. Expert or amateur)
- Does it have extensive bibliographies?
- How up-to-date is it?
- What is its scope?
- Does it aim to give an objective, factual account or a particular viewpoint?

4.vi. Finding journal articles

A number of abstracting and indexing services covering the humanities and current affairs are useful information resources for history. For example,

Arts and humanities citation index

Australian public affairs information service

British humanities index

Humanities index

Readers guide to periodical literature

There are also specialized abstracting and indexing services relating to history, for example,

America: history and life. Santa Barbara: Clio. Covers U.S. and Canadian history.

Historical abstracts. Santa Barbara, Clio. 1955- . Part A, Modern history abstracts, 1450-1914; Part B, Twentieth Century abstracts, 1914-the present.

Annual bulletin of historical literature. London, Historical Association, 1912-

A single volume index to journal articles on Australian history is

HOGAN, T. and others. Index to journal articles on Australian history. Armidale, University of New England, 1976. R994.016 HOGA

This has been updated by:

CRITTENDEN, V. and THAWLEY, J. Index to journal articles on Australian history 1974-1978. Kensington, N.S.W., Australia 1788-1988: a Bicentennial History, 1981.

There are a number of computer-based information services which cover history, for example,

America: history and life.
Available through e.g. Dialog. Covers all aspects of U.S. and Canadian history.

Historical abstracts.
Available through e.g. Dialog. Covers world history (excluding the U.S. and Canada). 1450 to the present.

4.vii. Newspapers and day-to-day events

Contemporary newspaper accounts can be an important source of historical evidence. Newspaper indexes, like those to the Times and New York Times are useful in locating such material.

There is an index to the Sydney Morning Herald which unfortunately ceased publication in 1961. Some libraries maintain indexes to major Australian newspapers, for example State Library of N.S.W., N.S.W. Parliamentary Library, and the libraries of newspaper publishers such as John Fairfax.* Some local municipal libraries index the local papers.

For accounts of recent international events, the following indexing services are useful:

Facts on file: world news digest with index.	R909.8205 FAC 1
Keesings contemporary archives.	R909.8205 KEE 1

There are also computer-based indexes to newspapers and current affairs magazines, for example

Magazine index. Los Altos, Information Access Corp.

National newspaper index. Los Altos, Information Access Corp.

Indexes Christian Science Monitor, New York Times and Wall Street Journal.

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* The Mitchell Library's partial index to the Sydney Morning Herald, 1961-1978, has just been published on microfiche. Available from W. and F. Pascoe.

4.viii. Lists of references

Bibliographies can be found in many of the information resources we have discussed, for example in encyclopaedias, in guides to the literature, in standard histories. Examples of separately published bibliographies are

HANHAM, H.J. Bibliography of British history, 1851-1914. Issued under the direction of the American Historical Association and the Royal Historical Society of Great Britain. Oxford, Clarendon Press, 1976. — R 942 HANH

BEDDIE, M.K. Bibliography of Captain James Cook. 2nd ed. Sydney, Mitchell Library, 1970. — R016.91092 LIBR

FERGUSON, J.A. Bibliography of Australia, 1784-1900. Sydney, Angus and Robertson, 1941-69. 7 vols. — R016.994 FER 1

ROACH, J. ed. A bibliography of modern history. Cambridge, C.U.P., 1968. — R016.9402 ROAC

5. STUDY QUESTIONS AND EXERCISES

1. Can history be 'unbiased'? Should it be? Give some examples of historical writing, film, etc. which you consider 'biased' and 'unbiased'.

   (The following quotations may be useful.)

   'God cannot alter the past, but historians can'
   (Samuel Butler)

   'History is a set of lies agreed upon' (Napoleon)

   'History's lessons are no more enlightening than the wisdom of those who interpret them'
   (David Schoenbrun)

   'History is always best written generations after the event, when clouded fact and memory have all fused into what can be accepted as truth, whether it be so or not' (Theodore H. White)

   'Sometimes an evocative rhetoric is the best means a historian has for formulating and communicating what he knows' (J.H. Hexter)

2. Consider a museum, archive or similar institution which you know or have recently visited. How good an historical information resource is it? List the good and bad points. Can you think of ways in which it could be improved as a source of historical information?

3. (a) A fairly new type of history is history of the family. List the kinds of information resource which you think could be useful to someone writing a history of the family in Australia. What sort of problems can you see in using the materials you have listed as historical evidence?

(b) No-one has yet written a comprehensive history of Australia's involvement in the Vietnam war. List the kinds of information resource which someone writing such a history could use. What problems do you foresee in obtaining or using the kinds of resources you have listed?

4. A question of particular importance in Australia is the history of Aboriginal people. So far almost all Aboriginal history has been written by white historians. Some Aboriginal people feel that only they can write their own history, and that it should not necessarily be written in the traditional western historian's manner. For example it might be communicated visually, or orally, or it might be written in Aboriginal languages. They feel too that all white history distorts Aboriginal experience.

   What criteria should be applied by a librarian, museum curator or anyone else building a collection of information resources on Aboriginal history? Give examples of the types of material which should, and should not, be included. Consider how the criteria might differ according to the objectives of the institution (e.g. public library compared with research library).

5. In answering the following questions, note the source you used. Wherever possible check two sources, and compare their characteristics and the quality of the information you obtained.

   (a) Give the date of the Battle of Waterloo. Why were the British victorious?

   (b) Find a list of events which occurred in 1888. Note any references to Australia.

   (c) How did Gandhi die? When did it happen?

   (d) Who is the 10th Earl of Shaftesbury? Find genealogical information about his family.

6. Using resources listed in Section 4.iii, answer the following questions.

(a) Are there any manuscripts relating to Catherine Helen Spence listed in the NLA's Guide to collections of manuscripts relating to Australia? Where are they, and are they available to the public?

(b) Use the Concise guide to the State Archives of N.S.W. and its supplements to find out what material on shipwrecks is available in the Archives. What does the search tell you about the use of this guide and its limitations?

(c) Find the text of Governor Phillip's letter to Lord Sydney in which he records his impressions of the new colony in 1788. What did he perceive as some of his problems?

(d) Among the documents microfilmed from the War Office (U.K.) in the Australian Joint Copying Project is the correspondence concerning the "Eureka Stockade" disturbance (1855-56). Find the microfilm reel number of this correspondence. Where would you consult the microfilm?

7. Choose an appropriate standard history from those listed in Section 4.v. to answer one of the following questions:

(a) Is it true that Nero fiddled while Rome burned?

(b) Who were the Lombards and what did they do?

(c) Who was Bennelong?

(d) What were the origins of South Australia, and how did they differ from those of the other states?

(e) What does Anzac Day commemorate?

(f) What part did Australian women play in the first world war?

(i) Does the standard history you chose provide a satisfactory answer to the question? Give reasons.

(ii) On the basis of your experience in trying to answer the question, and a general examination of the standard history, write a short evaluation of it.

8. (a) "Joe who?" What is the name of the Canadian Prime Minister who took office in 1979?

(b) What recent information can you find about aboriginal land rights?

(c) When did the Argentine surrender to the U.K. in the sovereignty debate over the Falkland (Malvinas) Islands?

9. Select 5 journals in history you consider suitable for a public library located in Sydney. Give reasons for your choice.

V. EDUCATION

Outline of Segment

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1. OBJECTIVES

When you have completed this segment, you should be able to answer or discuss questions such as these:

i. What are the dimensions of the term "education"?

ii. How is information generated, communicated and used in education?

iii. Who uses educational information resources and what types of resource do they use?

iv. What types of information resources are available in education?

v. How do these differ from resources in other subject areas?

In addition, you will have acquired particular skills including the ability

i. to identify problems in selecting educational materials

ii. to analyse queries concerning education

iii. to choose and use resources appropriate to queries in education, emphasizing in particular Resources in Education and Current Index to Journals in Education.

2. EDUCATION: WHAT IS IT?

Education is essentially an interactive process by which people acquire knowledge, attitudes, values, or skills. Education is what a teacher does; it is the imparting of knowledge, skills or attitudes through systematic instruction (teaching) and interaction with the learner. Education is also what happens to the learner; the acquisition of knowledge or skills through the processes of teaching and learning. Traditional views of education tended to see this process as a one-way imposition: the learner being a mere passive recipient. Contemporary views of education emphasize the interactive nature of the teaching-learning process, and the development of the learner's innate qualities and skills.

Yet another dimension of education is the field of study concerned with the theory of teaching and learning, and with research designed to improve both the theory and the practice of education. There are numerous specialised branches of educational research, some of which are as follows:

History of education

Theory and philosophy of education - the nature and purpose of education

Educational psychology - understanding the individual and group processes involved in learning and teaching

Educational sociology - how education relates to, and is influenced by, wider social issues and assumptions

Curriculum studies - what ought to be taught

Teaching methods - how it ought to be taught, with a view to optimising the learning experience

Educational measurement and testing, methods of assessment

Educational administration - the organisation and management of schools and teachers, relation of education to government

Educational policy - the purpose of education in a particular community or political system

Educational technology - methods of teaching and learning, especially those involving audio-visual and other equipment

Comparative and international education - comparative study of the educational systems of different countries and cultures.

Education is often characterised according to the age or level of the learners, or to the nature or purpose of what is taught. e.g.:

Preschool, nursery, kindergarten

Primary, elementary, junior

Secondary

Tertiary, higher

Special - education for those who are in some way 'atypical', as mentally or physically handicapped, socially or culturally disadvantaged, gifted, exceptional

Remedial - education designed to overcome deficiencies, such as through remedial reading, adult literacy training, English as a second language

Adult, continuing, recurrent, lifelong - traditionally associated with self-improvement, or 'hobby' learning, or both. Because of technological change and unemployment, increasingly seen as an essential component in the education system

Vocational, professional, technical, further - education for a specific occupation

Religious, moral, character - education to instil, or develop, specific values and codes of conduct.

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In primitive societies the task of socialising the young was entrusted to tribal elders, councils of wise men and to parents either separately or collectively. In its broadest sense, the objective of the socialisation process was the induction of the child into the ways, traditions and mores of the tribe. Modern societies have devised and built highly structured educational systems to achieve the same purpose. Into being has come the notion of "school", an institution which in many instances has become the major agency in the modern socialisation process.

As societies have grown more sophisticated and complex and have taken on differing social directions under the pressure of cultural, religious or political forces, so too have societies emphasised and reflected different goals for the schooling or socialisation process.

Any survey of comparative aims and goals of education reveals societies which hold, as did the ancient elite of Athens, that the basic end of the educational exercise was and is the production of an individual sound in mind and body. Today many societies still cling to the ancient Spartan idea that the principal aim of the socialisation process was and is the production of individuals capable of subjugating their individuality to the corporate well-being of the society or state. Yet again, there are present-day societies which hold that the ultimate goal of the socialisation and schooling processes is religious, moral or ethical in nature; while there are others which insist that the end is the acquisition of knowledge and would deny the need to inculcate specific ethical, moral or religious value systems. Wittingly or unwittingly, all educational systems are involved with their societies' transfer of culture, custom and tradition from one generation to another.

At a very broad and basic level, the question: "Why do we educate?" can be answered: "To socialise our young". At a much more specific level, we can recognise that the socialisation process has, in terms of schooling, different emphases and different purposes which are to some degree determined by the nature of the society and its philosophical foundations.

The question Why do we educate? is a key one. The answer sets the framework within which other questions and issues find their solution. The perceived purpose of school and schooling in part determines what should be taught and how it shall be taught, it influences very much who shall be educated or schooled.

The question "Why?" raises other fundamental issues. Is the school still the most viable agency for the socialisation of a community's young? Have societies not overloaded schools and education systems with functions they cannot possibly perform? Have the aims and goals of school systems kept pace with social change? If not, why is this so?

It is some of these issues which are raised in the articles in the first part of this book of readings. In this part there are six articles. At first glance they seem to be more concerned with "What is education?" rather than with the question

J.A. JOHNSTON. Six questions: controversy and conflict in education. Sydney, Wiley, 1975. p.3.

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3. USE OF INFORMATION RESOURCES IN EDUCATION

It is not easy to define educational information resources, because almost any resource can provide a learning experience, whether or not its producers intended it to be educative.

In an effort to clarify the question of what is an educational information resource, it may be useful to consider the different types of resource used in each of the three main roles identified in the education process - that is, learner, teacher, and theorist-researcher. (These, of course, are not mutually exclusive roles. All of us both learn and teach, whether consciously or unconsciously; most theorists and researchers are also both learners and teachers.)

There are also a number of other groups of people involved in education, for example, parents, professional associations, unions, government departments, all of whom may have different information needs.

Information resources used by teachers

By a teacher we mean anyone who teaches, formally or informally, at any level, or for any purpose.

The first need teachers have is for resources which will help them to teach, such as material relating to teaching methods, curriculum content, educational technology, methods of assessment. They may also need resources relating to the organisational aspects of teaching, such as material on educational administration, government regulations, union affairs and so on.

Secondly, teachers need information resources which will help them to understand their pupils, such as material on individual and group psychology and motivation; on the behaviour and characteristics of specific age groups, socio-economic classes, cultural groups, communities, etc., or on the problems of groups or individuals with specific disabilities.

Thirdly, teachers need information resources relating to the subjects they teach - the teacher of mathematics, for example, must understand mathematics as well as teaching. Teachers therefore use the general information resources of whatever discipline they teach.

Fourthly, teachers need information resources at a level appropriate for their pupils. In some cases, as in university teaching, these are likely to be the same resources as the teacher uses to develop his own knowledge. In other cases, the teacher will use the general information resources appropriate to the pupil's age or learning level - e.g. juvenile books; materials for slow readers.

Information resources used by learners

By the learner we mean anyone who recognises that he is in a learning situation; that is, here we are excluding the unconscious learning by experience which we do all the time. Learning situations may be formally organised, as in school or tertiary education, or they may be informal, as in private, self-paced study, or they may be a mixture of the two as in the case of classes undertaken voluntarily.

Learners may use specified curricular materials, as when they use set texts or references listed in a syllabus. They may also use information resources which they discover independently: in this case they use the general information resources appropriate to the subject or to their particular age or level.

Learners may require information resources related to the techniques of learning and study. Potential learners may need resources which tell them where and how a particular subject may be studied.

Information resources used by theorists and researchers

For educational theorists and researchers, education is an academic discipline. As a consequence, the information resources they use are of similar types to those used in other academic disciplines. However, like all researchers in a field which contains both theory and practice, educational researchers need access to the resources used in the practical branch of the subject, for example, the researcher in the field of reading development consults children's readers, as well as monographs and journal articles on the subject.

Information resources used by parents

With the increasing participation of parents in school and learning activities which may range from governance to helping in the tuck shop, resources directed towards intermediaries such as parents have become necessary.

As can be seen from the foregoing, information in education is required by many different types of people, at many different levels. Compare for example the information needs of the Parent and Citizens Association with that of a researcher for UNESCO or a five year old school pupil. Many people in our community take an interest in education as is evidenced by the popularity of articles in the education sections of newspapers like the Australian and the Sydney Morning Herald.

Education as a tool subject

As well as being a practical and theoretical subject in its own right, education is a tool for other subjects. For example, a significant proportion of the information resources relating to specific subjects, such as history, or science, or motor mechanics, consists of resources for teaching or learning those subjects.

In this guide, we do not deal with the information resources appropriate to the teaching or learning of a particular subject: that is the province of guides to the information resources of the subject in question. Nor do we deal with information resources for children, since they fall within the specialised area of children's literature.

4. EVALUATION AND SELECTION OF INFORMATION RESOURCES IN EDUCATION

In evaluating information resources for education, the criteria used to evaluate non-fiction information resources which were listed under the mnemonic 'APPARATUS' (refer to earlier handout) generally apply.

Where special categories of resource are used in education, the evaluation criteria appropriate to those categories also apply - e.g. special criteria for children's resources, or for imaginative literature.

Selection of information resources may be considerably influenced by the institution which the library serves. For example, school libraries support the school's curriculum; college and university libraries select in accordance with the institution's teaching and research programmes. Libraries serving institutions with a particular educational philosophy may be required to select material which supports that philosophy. The ideal of representing all points of view may not be thought appropriate in libraries serving the educational needs of children and other vulnerable groups.

5. SPECIFIC TYPES OF INFORMATION RESOURCE IN EDUCATION

5.i. Definition of words and phrases

Inexactness of terminology is often a problem in education, as it is all the social sciences. Moreover, the educational systems of different countries and the terminology used to describe them, vary: e.g. try translating American school grades or a concept like alternative schools into their Australian or British equivalent. It is therefore important to check carefully the place of publication, and the scope of any information resource you use. It is also advisable to check more than one source.

It is good policy to clarify terms by consulting a specialised dictionary. There is a variety of dictionaries and similar guides to terminology in education. The following are some examples:

GOOD, C.V. (ed.) Dictionary of education. 3rd ed. New York, McGraw-Hill, 1973.	R370.3 GOO 1
McLAREN, J.D. A dictionary of Australian education. Harmondsworth, Penguin, 1974.	R370.994 MACL 1
PAGE, G.T. and THOMAS, J.B. International dictionary of education. London, Kogan Page, 1977.	R370.3 PAGE
Thesaurus of ERIC descriptors. 9th ed. Phoenix, Oryx Press, 1982.	R025.3337 EDU 1 1982

Specialised encyclopaedias (as listed elsewhere in this handout), are also useful for defining and clarifying words and phrases in education.

5.ii. Overview of the subject and its information resources

Once again, it is suggested that guides to the literature will be most helpful in getting started, particularly if you are unfamiliar with the subject. You will find the sections on education in SHEEHY, WALFORD and WHITE useful. In addition, there are specialised guides for education, the following being some examples:

BERRY, D.M. A bibliographical guide to educational research. Metuchen, Scarecrow Press, 1975.	R370.16 BERR
BURKE, J. and BURKE, M. Documentation in education. New York, New York Teachers College Press, 1967.	
FOSKETT, D.J. How to find out: educational research. Oxford, Pergamon Press, 1965.	370.78 FOS 1
International guide to educational documentation. 2nd ed. Paris, UNESCO, 1971.	R.370.16 UNIT

KENNEDY, J.R. Library research guide to education: illustrated search strategy and sources. Ann Arbor, Pierian Press, 1979. — 025.56 KENN

WOODBURY, M. A guide to sources of educational information. Washington, Information Resources Press, 1976. — R.370.16 WOOD

5.iii. Background information

General and national encyclopaedias are often useful in education, particularly in answering questions relating to the history of education, or to its organisation and administration in various countries. Specialist encyclopaedias in related areas, such as the International encyclopaedia of the social sciences, may also be useful.

Examples of specialised encyclopaedias in education include:

Encyclopaedia of education. New York, Macmillan, 1971. 10 vols. — R.370.3 E 1-10

Encyclopaedia of educational research. 4th ed. New York, Macmillan, 1969. — R.370.78 E 1

International encyclopaedia of higher education. San Francisco, Jossey-Bass, 1977. 10 vols. — R.378.003 INTE

UNWIN, D. and McALEESE, R. Encyclopaedia of educational media communications and technology. London, Macmillan, 1978. — R.371.3078 ENCY

5.iv. Trends and achievements of the year, reviews of current topics

Various yearbooks summarise the important happenings of the past year, for example:

Education yearbook. New York, Macmillan, 1972-1974. 3 vols. — R.370.5 EDU 1

Others contain in-depth surveys and reviews of topics of current interest:

International yearbook of educational and instructional technology. London, Kogan Page, 1980- . — R.371.305 INTE

Melbourne studies in education. Melbourne, Melbourne University Press, 1957- . — R.370.994 MEL 1

World yearbook of education. London, Evans, 1932-40; 1948- . — R.370.5 YEA 1

Yearbook of special education. Chicago, Marquis Academic Press, 1976- . R.371.905 YEAR

Statistical information is important in education, for example in the study of national trends and international comparisons. Such information is often published in yearbooks:

UNESCO., Statistical yearbook. Paris, UNESCO, 1964- . R.310.05 UNE 1

Information on recent trends and developments including statistics may also be obtained from the annual reports of organisations concerned with education. Some such organisations are as follows:

Australian Department of Education
New South Wales Department of Education
Schools Commission
Australian Council for Educational Research (A.C.E.R.)
Tertiary Education Commission
New South Wales Board of Adult Education
Workers Education Association
New South Wales Teachers Federation

5.v. People, places, organisations

'Directory' type information resources are particularly important within education, since questions relating to people, places, organisations and services within education often need to be answered.

(a) People

In the field of education, information relating to persons is frequently required: e.g. important persons in the history of education; current information about persons involved in education.

Questions relating to people important in the history of education can often be answered from general, national or specialised encyclopaedias, or from standard histories of education.

Questions relating to living people often concern "who teaches at which educational institution'; or the qualifications and research interests of individuals.

The following information resources are useful in answering questions relating to persons within education:

American men and women of science. 12th ed. New York, Bowker, 1973. 8 vols. R.509.22 AME 1-8

AUSTRALIA, Department of Education, Directory of education research and researchers in Australia. 2nd ed. Canberra, A.G.P.S., 1980. R.370.9941 AUSE

Biographical dictionary of American educators. OHLES, J.F. ed. Westport, Greenwood Press, 1978. 3 vols.

Commonwealth universities yearbook. London, The Association of Commonwealth Universities. Annual. — R378.41 COM 1

National faculty directory. Detroit, Gale Research. 2v. Annual. — R378.1205 NATI

Who's who in education. BRADFIELD, R. ed. London, Mercury House Reference Books, 1974.

(b) Organisations

Questions about educational institutions often relate to the subjects taught, or the educational objectives pursued, as well as to names and addresses. Useful resources for such questions include:

Australian education directory. Canberra, Commonwealth Department of Education, 1980. — R.370.994025 AUS 1

Directory of independent secondary schools of Australia. Chatswood, N.S.W., National Fund Raising Council of Australia, 1980. Annual. — R371.02 DIRE

International handbook of universities and other institutions of higher education. 7th ed. London, Macmillan, 1978. — R.378.100202 INT 1

NEW SOUTH WALES, Department of Education, The secondary school guide. Sydney, Government Printer. Annual.

World of learning. London, Europa. 2 vols. Annual. — R.378.05 WOR 1

(c) Where to study what

Many questions asked in libraries relate to educational opportunities, the existence of courses, admission requirements, fees and scholarships, and so on. Besides the calendars and handbooks put out by individual institutions, the following resources are helpful in answering such questions.

AUSTRALIA. Department of Education, Directory of higher education courses. Canberra, A.G.P.S. Annual. — R.378.94 AUS 1

NEW SOUTH WALES. Higher Education Board, Higher education handbook. Sydney, Government Printer. Annual. — Available at Reference Desk

NEW SOUTH WALES. Board of Adult Education, Opportunities to learn: a guide for adults. 3rd ed., Sydney, Board of Adult Education, 1979. — R374.005 NEWS

NEW SOUTH WALES. Department of Technical and Further Education. Handbook. Sydney, Government Printer. Annual. — Available at Reference Desk

Study abroad: international scholarhips, international courses. Paris, UNESCO, Biennial. — R.378.35 STU 1

ATHCOM: Australian tertiary handbook collection on microfiche. Melbourne, McCarron Bird, 1980. Annual. — Available at Reference Desk

Commonwealth universities yearbook. London. The Association of Commonwealth Universities. Annual. — R.378.41 COM 1

5.vi. Alternative education

There are numerous 'alternative' movements and searches for 'freer', more 'open' institutional and curricular forms of education. These now represent a significant counter-culture to more traditional forms of education. Writers such as Ivan Illich, Paulo Freire and John Holt have been at the forefront of this search for alternatives to traditional educational institutions. Their writings have had considerable impact both upon the practitioners and the consumers of education.

The following are some of the resources available relating to alternative education:

ALLEN, J. The kids' catalogue: resources for learning and living in Australia. Melbourne, Greenhouse, 1975. — R301.4310994 ALLE

DINHAM, B. and NORTON, M. The directory of social change: education and play. London, Wildwood House, 1977. — R.370.19 EDUC

LISTER, I. Deschooling: reader. London, Cambridge University Press, 1974.

TORSCH, D. 'Good morning boys and girls': women's education catalogue. Carlton Greenhouse, 1976. — R.016.376 GOOD

UNIVERSITY OF NEW SOUTH WALES. Students' Union, Alternative handbook. Annual (Irregular).

5.vii. Curriculum materials, including audio-visual materials

Curriculum materials, e.g. textbooks, films, slides which are used in particular courses are an important information resource in education. In New South Wales, the Curriculum Resources Centre of the N.S.W. Department of Education not only has copies of curriculum materials, but also develops new materials.

Some examples of guides to curriculum materials are:

BROWN, L.G. Core media collection for secondary schools. 2nd ed. New York, Bowker, 1979.	R373.133 BROW 1979
PAUSACKER, J. Sugar and snails: a counter-sexist booklist. Melbourne, Women's Movement Children's Literature Co-operative, 1975.	R028.52 PAU
National Information Center for Educational Media (NICEM). Index to 16mm educational films. 7th ed. Los Angeles, 1980. 4 vols.	R011 NAT 13 1977 (6th ed.)
National Information Center for Educational Media (NICEM). Index to educational audio tapes. 5th ed. Los Angeles, 1980.	R011 NAT 6 (3rd ed.)
Selecting instructional media: a guide to audiovisual and other instructional media lists, by M.R. Sive. Littleton, Colo., Libraries Unlimited, 1978.	R371.33 SELE
STANELIS, N.K. Resources for schools: multicultural education. Rev. ed. Canberra, Schools Commission 1978.	R371.32 STAN

Examples of curriculum materials which can be seen in the Curriculum Development Centre of the K.C.A.E. Resources Centre are:

More phun spelling	C372.4 ABB2
Audio reading kit	C372.41 AUDI

5.viii. Educational tests and measurement

Recent reviews of tests may be found using indexing services such as Psychological abstracts and the ERIC data bases. There are also important collections of tests held at the Educational Testing Service and the ERIC Clearinghouse on Tests, Measurements and Evaluation in the United States.

Eighth mental measurements yearbook, edited by O.K. Buros. 2 vols. Highland Park, N.J., Gryphon Press, 1978. — R153 MENT 1978

Summarizes and reviews initially a very large number of tests. Also lists books and articles on testing and assessment techniques.

Australian Council for Educational Research. Annotated catalogue of educational tests and materials. Melbourne, 1977. — R371.26 AUST

5.ix. Selected bibliographies

Bibliographies can be found in many of the resources discussed in this handout - e.g. in encyclopaedias, guides to the literature, standard histories, yearbooks. Some examples of bibliographies relevant to Australian education are:

AUSTRALIAN COUNCIL FOR EDUCATIONAL RESEARCH. Serials in education in Australian libraries. 3rd ed. Hawthorn, A.C.E.R., 1979. — R370.16 A 1 1979

BROWN, C.A. Bibliography of Australian education from colonial times to 1972. Hawthorn, A.C.E.R., 1973. — R370.16 B 1

CRAVEN, E. Multilingualism and education: an annotated bibliography. Canberra, Australian Government Publishing Service, 1980. — R371.97 CRAV

5.x. Abstracting and indexing services

Education is quite well provided with abstracting and indexing services: some cover the whole field; others are more specialised. The following are some examples:

** Australian education index, 1958- . Hawthorn, A.C.E.R., 1958- . — R370.005 AUS 1

British education index, 1954- . London, The Library Association, 1954- . — R370.005 BRIT

* C.I.J.E.: Current index to journals in education. 1969- . New York, Oryx Press, 1969- . — R370.005 EDU 3

Education index, 1929- . New York, Wilson, 1929- . — R370.005 EDU 7

* Exceptional child education resources, 1969- . Reston, Council for Exceptional Children, 1969- . — R371.005 EXC 1

---

* Also available on-line through Lockhead's Dialog or SDC's Orbit.

** Also available on-line through AUSINET.

Sociology of education abstracts, 1965- . Oxford, Carfax, 1965- . R370.19305 SOC 1

General indexing and abstracting services, or those covering subjects related to education, may also be useful - e.g. P.A.I.S.; A.P.A.I.S.; British humanities index; Readers' guide to periodical literature; L.I.S.A.; Social sciences index and Social sciences citation index.

5.xi. Reports

The term 'report' generally applies to accounts of research carried out by government departments, or by other organisations or individuals under government contract. Reports are not distributed through the normal commercial publishing channels because of their highly specialised content and limited readership; in some cases, access may be restricted because of government policy. Consequently, it is often difficult to find out what reports have been published, or to obtain them. A number of specialised information retrieval services have been developed to deal with both these problems.

A good deal of information relevant to education is published in report form because of the extensive involvement of governments in educational policy. Report literature relevant to education is indexed and abstracted in

Resources in education, Washington, ERIC, 1966- . R370.005 EDU 4

Resources in education and CIJE are produced by ERIC, the Educational Resources Information Center, which is sponsored by the U.S. Office of Education. ERIC is a document delivery system for reports as well as an indexing service: the majority of the reports listed in R.I.E. can be purchased from the ERIC Document Reproduction Service.

In Australia, microfiche copies of many ERIC documents can be obtained from the National Library of Australia, which also maintains a register of other Australian libraries holding sets of ERIC documents. Macquarie University maintains a full set of ERIC documents.

Before searching Resources in education or CIJE, the Thesaurus of ERIC descriptors should be consulted for the appropriate subject headings.

Reports relating to Australian education are listed in:

BROWN, C.A. Reports on education: a revised list. Hawthorn, A.C.E.R., 1972. R370.16 B 2

BROWN, C.A. Australian reports on education. Melbourne, A.C.E.R., 1976. R016.370994 BRO 2

5.xii. Theses

Theses, or dissertations, are written by candidates for higher degrees in universities and colleges. They can be valuable information resources for those seeking information and bibliographies on a very specific topic. However, they are often neglected as information resources since they are not distributed through normal publishing channels, and because most abstracting and indexing services do not include them.

A comprehensive listing of theses (mostly American and Canadian) is

Dissertation abstracts international: A - Humanities and Social Sciences; B - Sciences and Engineering. Ann Arbor, University Microfilms, 1938- .	R016.378242 DIS 1

Copies of theses can usually be obtained by purchasing them from University Microfilms.

American doctoral dissertations. Ann Arbor, University Microfilms, 1933- . Covers only United States and Canadian theses.

Australian theses are listed in

Union list of higher degree theses in Australian libraries. Hobart, University of Tasmania Library, 1967- .	R016.378242 UNIO

The theses listed can usually be obtained on inter-library loan from the relevant university.

Australian theses in the field of education are also listed in:

BROWN, C.A. Education theses: a list of theses in education accepted for higher degrees at Australian universities. Hawthorn, A.C.E.R., 1974.	R016.370994 BRO 1

You may also find the following resource useful:

How to locate Australian theses: a guide to theses in progress or completed at Australian universities and the University of Papua New Guinea. Canberra, Australian National University, 1979.	R375.00994 AUST

6. STUDY QUESTIONS AND EXERCISES

1. Based either on your own knowledge or on the quote on p.122, do our schools have a socializing role to play? To answer the question you will need to consider what the difference between education and socialization is, if any.

2. Would you select comic books for a school library? List your arguments for and against.

3. The following excerpt from the Sydney Morning Herald of 11th July, 1981, illustrates some of the problems in selecting educational information resources. What criteria do you consider most important in building a collection of educational information resources?

. . . Japanese educationists battle for young minds

JAPANESE CHILDREN up to 16 receive free Government textbooks. Our Tokyo correspondent, HAMISH McDONALD, examines Government moves to force controversial changes.

WHY DID Japan attack Pearl Harbour? What was the effect of the atom bomb at Hiroshima? Who is to blame for Minamata disease? Are Japan's armed forces legal? Are nuclear power stations safe?

A controversy over what younger teenagers should be told about these issues in school textbooks has exposed fundamental divisions in Japanese politics, in a battle between Right and Left for the minds of Japan's young.

A strong section of the ruling conservative Liberal Democratic Party believes junior high school students should not be told the names of polluters, should not be told that nuclear power plants cause environmental concern, or that the constitutionality of the Japanese forces is disputed.

Conservative critics of the present textbooks do have some evidence of Left-wing bias. The books state blandly that the United States maintains military bases on Okinawa, but does not mention that the island province was returned to Japan in 1972 – or that the Soviet Union keeps sizable forces on the disputed northern islands it still holds from World War II.

The books mention Admiral Nelson, but not Japan's naval hero of the 1904-5 Russo-Japanese war, Admiral Togo. A caption below a picture of atom-bombed Hiroshima states: "We must not repeat this mistake." Who dropped the atom bomb? Did Japan deserve it? the critics ask.

The conservative textbook revisionists took a step forward last month when the LDP formally adopted as policy recommendations to tighten screening of textbooks.

But by then they had already made more extensive gains through the collapse of the Education Ministry and the textbook publishing industry to Right-wing pressure. In April, the main publishers announced sweeping voluntary revisions for the next batch of junior high school texts due in 1984 along the suggested LDP lines.

The ministry has taken a blue pencil to new textbooks for a new senior school course called Modern Society.

One such change is deletion of the name of the company, Chisso, from whose plant at Minamata flowed mercury effluent that stunted and deformed children nearby, on the ground that some readers might have parents who work for Chisso.

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4. As far as possible, answer the following questions using the resources listed in Sections 5.i-iv. The aim of this exercise is to give you practice in identifying appropriate information resources for different kinds of questions.

For each question:

(a) List your sources consulted
(b) Write down the answer briefly
(c) Which source was best? Why?
(d) Any problems.

(a) What is special education? To which groups of children might it apply?

(b) What is dyslexia and how is it associated with reading problems?

(c) What can you find out about simulations and "serious" games in education? Find an example of a simulation game.

(d) What was the contribution of John Dewey (1859-1952) to the philosophy of education?

(e) Locate a table of the education systems of the world.

Find (i) the most common entrance age at the first level of education

(ii) the average duration (in years) of compulsory education in the world.

5. The following questions are based on the resources listed in Section 5.v.

For each question:

(a) List your sources consulted
(b) Write down the answer briefly (name of resource answer found in)
(c) Any problems.

(a) Who is William Shockley? List some of his research. Where does he live?

(b) Is there a University of Science and Technology in the People's Republic of China? In which province is it situated?

(c) At which Canadian university does J. Schmidt teach? In which department? List the qualifications.

(d) Give the names of two researchers in Australia whose principal field of interest is computers.

(e) Find information for someone in Sydney who wants to become a licensed optical dispenser for the making and fitting of lenses from prescription. Where is the course offered? What are the conditions for admission?

(f) Find information for someone who wants to study journalism at first degree level, in Australia. Find a brief description of the appropriate higher education institution.

6. Using Resources in education or Current index to journals in education find recent references to material on one only of the following topics:

   a) Individualized reading programs
   b) New methods of teaching speech in schools
   c) Educability of Down's Syndrome children
   d) Participative management for teachers

For each question give:

   a) Concepts or aspects of the question
   b) Title and dates of resource searched
   c) ERIC descriptors (subject headings) searched (include whether successful or unsuccessful)
   d) Any problems.

Cite 2 examples of what you found.

Complete citation:

ED number (where relevant)

Who useful for:

Complete citation:

ED number (where relevant)

Who useful for:

7. Choose one of the following questions.

(a) A parent wants to find some recent information on free schools in Australia and overseas.

(b) A researcher wants information for a project on transition from school to work programs.

(c) A teacher wants information on how to teach physical education to blind children.

(d) A college administrator wants evaluations of distance education as a method of teaching in tertiary institutions.

(e) A teachers' union wants information on job sharing for teachers to further its case.

(f) A Parent and Citizen's Group wants to know what educationalists think of corporal punishment in schools these days.

Your answer should consist of the following sections:

(i) Concepts or aspects of the question.

(ii) Type of information required, limitations on the question and the answer.

(iii) Type of information resources most suitable, e.g. indexing services.

(iv) Actual sources searched. For each source, say why you chose it, what subject headings you used to find the information and what type of information you found. (Important - list only the four or five best sources used.

(v) List two references chosen from the above sources. Comment briefly on their suitability to the user.

VI. CHEMISTRY

Outline of Segment

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As KCAE does not have a large chemistry collection, University of New South Wales call numbers are given in the left hand margin of these notes.

1. OBJECTIVES

When you have completed this segment, you should have some answers to questions like these:

i. What is it about chemistry which distinguishes it from other scientific disciplines?

ii. What are some of the characteristics of chemists? How do they work, how do they use information? What are the implications of this for providing information services for them?

iii. What are some of the major characteristics of the types of information resource commonly used by chemists and chemical technologists?

You should also have acquired certain skills, in particular:

i. Describe some of the main types of information resource used in chemistry, their characteristics and what they can be used for.

ii. Select appropriate information resources to answer specific questions in chemistry.

iii. Use chemical information resources effectively to answer simple enquiries through a limited understanding of the principles of chemical formulae.

iv. Use Chemical Abstracts effectively.

2. CHEMISTRY: WHAT IS IT?

2.1. The subject matter of chemistry

Chemistry deals with substances, their composition, their properties and their reactions with other substances. Chemistry is particularly concerned with the changes in matter, the laws and principles which describe these changes, and the concepts and theories which interpret them. Chemistry emerged as a science during the seventeenth century from alchemy, which had applied theories to nature, using concepts of magic as well as science, religion and philosophy.

There are many branches of chemistry. Different branches may be associated with particular groups of substances, or with the techniques and methods used to analyze them.

The two main branches of chemistry according to the substances studied are

Organic Chemistry	Inorganic Chemistry
Substances which contain carbon, of which living organisms are composed.	Substances which do not contain carbon.
Examples: Petroleum, alcohol, soap, hormones	Examples: Zinc, silver, water.

Biochemistry is the study of the chemical processes of living things.

Physical chemistry, which is very close to physics, uses mathematics to explain chemical processes, and is concerned with the problems of chemical reactions, the energy associated with them, and the nature of various states of matter.

Analytical chemistry investigates the chemical composition of substances using precise instruments to determine elements present and their amounts.

Applied chemistry (sometimes referred to as Chemical technology or Chemical engineering) is concerned with putting chemical knowledge to practical use, for example, in industry or agriculture.

The list of subject sections in Chemical Abstracts (page 16) will give you a more complete picture of the various branches of chemistry.

2.2. The language of chemistry

Chemistry uses signs and symbols a good deal. A little familiarity with chemical nomenclature will make it easier for you to use chemical information resources.

Each substance is known as a chemical element and is composed of extremely small particles called atoms. Each element has a symbol, which is used to represent both the element and an atom of the element:

O	Oxygen
C	Carbon
H	Hydrogen
Na	Sodium
Cl	Chlorine

Combinations of atoms are known as molecules, and combinations of two or more elements are known as chemical compounds. Each chemical compound has a formula:

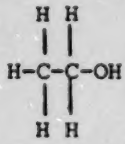
H_2O = Water

Na Cl = Salt

Sometimes the chemical formula reflects the structure of the compound - how the atoms or molecules are grouped together. For example, the structural formula of ethanol (or ethyl alcohol) is

$CH_3\ CH_2\ OH$

The same information can be given in a structural diagram:



Ethanol or Ethyl alcohol

Chemists often refer to a substance by its molecular formula, which does not show structure. The molecular formula for ethanol is

C_2H_6O

This formula is arranged in Hill order, which is very commonly used in chemical information resources. Hill order simply means that all the elements in a compound are arranged in the following order:

If carbon is present: Carbon, then hydrogen (if present), then all other elements in alphabetical order firstly and then numerically by number of atoms.

If carbon is not present: All elements in alphabetical order, and then numerically by number of atoms.

$AsBr_4$	CAl_4O_4	C_2H_3
AsH_3	$CHCl_3$	ClO_3
$As_2B_8H_6S$	CH_2Cl_2	Cl_4Zr
B_4H_9	CNS	Zr
B_4H_{10}	$C_2F_3IO_4$	

Table 1 : Formulae in Hill order

3. CHEMISTS: THEIR WORK AND THEIR INFORMATION RESOURCES

3.1. How chemists work

Science originated from man's desire to understand and interpret his surroundings. The collection of facts and theories about natural phenomena has always intrigued man, but it was not until conclusions or theories about phenomena were subjected to experimentation, that science as we know it evolved. The process of testing to establish the validity of a theory is now a recognised principle of all science, including chemistry, and is known as the Scientific Method. The McGraw-Hill dictionary of science and technology defines scientific method as "The systematic collection and classification of data, and, usually, the formulation and testing of hypotheses based on the data."

The chemist's research therefore can be regarded as the "processing of information so that questions are thrown up to which answers can be found through experimental work, thus generating new information for the future." (Bottle)

3.2. How chemists obtain information

Chemists, like all scientists, need constant access to information. They need to know what other scientists have discovered, and they do this in two ways:

i. *Ask someone*

This informal means of information gathering is enormously important to the scientist. Sometimes known as the "invisible college", communication via letters, personal discussions, attendance at conferences and "over the work bench" enables chemists to enrich their knowledge of their own and related fields.

ii. *Consult the literature*

A chemist consults the scientific literature for a number of reasons:

(a) to keep up to date with current and proposed research in the chemist's own and related fields;

(b) to obtain fast, reliable access to specific information necessary in daily work;

(c) to discover all that has already been achieved in a given area.

If chemists cannot find any reference to existing research which reports the information they need, they use a third method of finding out:

iii. *Conduct an experiment*

This is often the only way of obtaining needed information, but unnecessary and wasteful if that work has already become part of the established, recorded body of scientific literature. In conducting an experiment the chemist will use the methods of gaining information already discussed - asking someone, or consulting the literature - as a basis for experimentation.

A number of studies have been done to discover the relative popularity of different methods of obtaining information among scientists. The following table summarizes the results of some of them, and compares chemists with physicists:

Method	Ranking Order Physicists	Chemists
Following up citations in relevant papers	1	1
Keeping up by reading current publications	2	2
References from conversations with colleagues	3	5
Unpublished material obtained from colleagues	4	10
Use of abstract journals and indexes	5	3
References from correspondence with colleagues	6	9
Use of personal index or record	7	4
Use of a textbook	8	6
Use of a subject bibliography	9	7
Use of a library card-index	10	11
Consulting internal reports of one's own organisation	11	8
Asking librarian or information officer	12	12

(Taken from A.J. Meadows Communication in science. London, Butterworths, 1974, p.95).

Table 2 : A Ranking Order For Various Methods of Acquiring Information

3.3. Where chemists work

Most research chemists work in universities, or in research establishments such as the CSIRO. Some large companies, such as C.S.R. or some pharmaceutical companies, also employ research chemists.

Chemists who work in applied fields may be found in many types of industry, and in government departments, for example:

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manufacture of pesticides
manufacture of animal feedstuffs
petroleum industry
beer, wine and food manufacture
rubber and plastics manufacture
analysis and testing of foods, drugs, chemical products.

3.4. Why chemists generate information

Chemists, like all scientists, have a responsibility to contribute to scientific knowledge. Pure chemists, in particular, not only use information, they also generate it, by talking to their colleagues, and especially by publishing papers in scientific journals.

It is very important for chemists (and for all scientists) to establish priority - that is, to get their idea into print before someone else does. Hence the importance of publication.

The position is rather different for applied chemists. They may want to establish priority so that they or their organization can reap the profits from an idea - this is an important reason for patenting new inventions. But if they work for private industry, they are also likely to want to keep their ideas secret.

4. CHEMISTRY: ITS INFORMATION RESOURCES

As we have said, a chemist cannot work in isolation from the literature. The records of chemistry are among the chemists' most valuable information resources, and the communication of chemical knowledge among his or her most important obligations. The literature of chemistry has consequently developed in response to the needs of chemists.

4.1. Guides to the literature

If you know nothing about the information resources in chemistry, the best place to start is with a "guide to the literature". There are general guides to information resources, such as SHEEHY and WALFORD, and guides to the literature of science, such as MALINOWSKY and CHEN. There are also more specialized ones for chemistry, such as:

ANTONY, A. Guide to basic information sources in chemistry. New York, Wiley, 1979. — R540.7 GUID

BOTTLE, R.T., ed. The use of chemical literature. 3rd ed. London, Butterworths, 1979. — 028.702454 BOT 1

BURMAN, C.R. How to find out in chemistry. 2nd ed. Oxford, Pergamon, 1966. — 016.54 BUR 1

UNSW P540.7 8 — MAIZELL, R.E. How to find chemical information: a guide for practicing chemists, teachers and students. New York, Wiley, 1979.

MELLON, M.G. Chemical publications: their nature and use. 4th ed., N.Y., McGraw-Hill, 1965. — R016.54 MEL 1

4.2. Sources reporting original work, and aids to finding them

A significant part of the chemical literature is concerned with the dissemination of new research results, or new interpretations of established knowledge. While results of work are communicated through letters, conference papers and conversation, it is a basic principle of scientific investigation that a piece of research is not regarded as complete until the results have been written up, and in sufficient detail to be reproducible. Sources which assist the communication of research results include periodicals, patents, reports and theses.

4.2.1. Periodicals

Often published by learned or scientific societies, periodicals contain major articles which report investigations and experiments. Two important publishers are:

American Chemical Society
Chemical Society, London

Some periodicals promote the rapid dissemination of information through brief communications or letters, rather than lengthy articles, e.g.

Tetrahedron letters. 1959- . Oxford, Pergamon Press.

Others carry "trade" information through news and advertisements, e.g.

Chemical and engineering news. 1923- . Washington, D.C., American Chemical Society.

Some titles may be general, covering important new developments in all fields, e.g.

American Chemical Society. Journal. 1879- . Washington, D.C.

Chemical Society. Journal. 1862- . London.

While others cover very specific subjects, e.g.

Phosphorus and sulphur and the related elements. 1976- . N.Y., Gordon and Breach.

Chemists also use more general and popular scientific journals, such as Nature and Scientific American.

4.2.2. Patents

Put simply, a patent is a contract between an inventor and the community by which the inventor retains the exclusive right to exploit his invention for a limited period, in return for making that invention public.

(Most patents are owned by companies, rather than by individuals.)

When an application is made to patent an invention, a patent specification is drawn up, containing a detailed description of the invention. Patent specifications are very important information resources for applied chemists (and for engineers generally) for several reasons:

- They are often the only source of information on an idea or invention
- They are a clue to what competitors are doing
- They can prevent needless duplication of research
- They can stimulate ideas for new research, new products, new solutions to problems
- They often summarize the existing knowledge on the topic.

Because of the importance of patents to chemical engineers, many of the abstracting and indexing services in chemistry include patents (see Section 4.3.2.1. Example A on page 163 shows Chemical Abstracts entries for patents.

There are also special services for obtaining information from patents. Most countries produce their own list of patents, for example

Australian official journal of patents, trademarks and designs. 1904- . Woden, A.C.T., Patent Office. Weekly with annual cumulations.

U.S. Patent Office. Official gazette. Wash., D.C., U.S. Dept. of Commerce. (Has undergone a number of changes of title). Weekly.

National patent offices such as the Patent Office in Canberra have collections of patents, and facilities for searching them. In Sydney you can consult patents at the Patent Office in Kent Street, and at the State Library of New South Wales.

There are also abstracting and indexing services, and on-line search services, devoted exclusively to patents, for example

International Patent Documentation Centre (INPADOC). Publishes a weekly service of patent information from 49 countries, on microfiche.

World Patent Index. On-line search service available through Orbit, containing patent information from 24 countries (not Australia). Derwent, the publishers of WPI, also publish a series of print abstracting and indexing services for patents, including Central patents index which covers chemistry.

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United States Patent [19]

Duncan

[11] Des. 250,812

[45] ** Jan. 16, 1979

[54] TIRE

[75] Inventor: Ethel L. Duncan, Akron, Ohio

[73] Assignee: The Goodyear Tire & Rubber Company

[**] Term: 14 Years

[21] Appl. No.: 808,769

[22] Filed: Jun. 22, 1977

[51] Int. Cl. ..... D12—15

[52] U.S. Cl. D12/146

[58] Field of Search D12/141-143, D12/145-151; 152/209

[56] References Cited

U.S. PATENT DOCUMENTS

D. 104,503 5/1937 Partenheimer D12/147

OTHER PUBLICATIONS

1971 Tread Design Guide, p. 154, Global Traction HDL Tire, center of page.

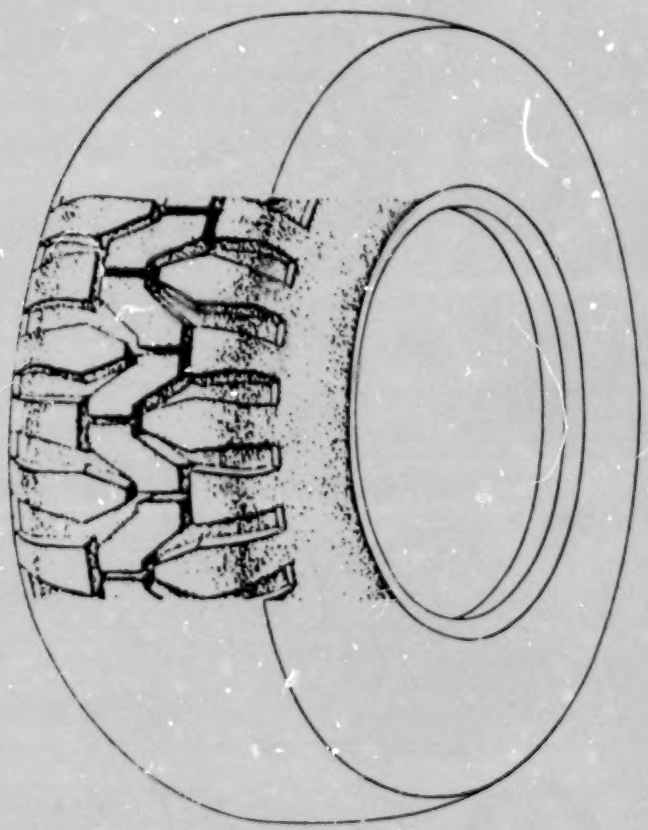
Primary Examiner—James M. Gandy
Attorney, Agent, or Firm—Frank Pincelli

[57] CLAIM

The ornamental design for a tire, substantially as shown and described.

DESCRIPTION

The FIGURE is a perspective view of a tire showing my new design, it being understood that the tread design is repeated throughout the circumference of the tire as shown schematically by solid lines, the opposite side being substantially the same as that shown.



Page 1 of a U.S. patent. The following pages would contain a detailed description. Figures in [] are international codes for indexing

4.2.3. Report literature

A good deal of the new research in chemical technology is done under government contract. The results of such research are often published in the report literature rather than in journal articles. Some technical reports are listed in abstracting and indexing services like Chemical Abstracts (see section 4.3.1.1.) There are also abstracting and indexing services which list only reports, for example

UNSW P REF 605.72 — Government reports announcements and index. Vol. 1, 1946- . Springfield, Va., U.S. National Technical Information Service. Has had several changes of title. — Examples in lab

UNSW P REF 505 197 — Australian scientific and technological reports. Vol. 1, 1978- . Canberra, National Library of Australia.

Many reports are also produced by private companies. While they are an important information resource within the company, they are not usually available to outsiders.

4.2.4. Dissertations

Dissertations, or theses, are the reports of research done for post-graduate degrees at universities or colleges. They are a significant source of information about new research. (Though if the research is important enough, it generally gets reported in journal articles as well.) Dissertations often contain extensive bibliographies and reviews of the literature.

Some abstracting and indexing services include dissertations: for example, Chemical Abstracts. There are also specialist resources for locating dissertations. Some of these will be examined in the Education section of this book.

4.3. Bibliographic sources

Bibliographic sources enable you to find out what has been published in the field. Chemistry is an extremely well-documented discipline, with excellent bibliographic resources.

4.3.1. Abstracting and indexing services

4.3.1.1. Chemical Abstracts

The most important, and most comprehensive abstracting service in chemistry is Chemical Abstracts, published since 1907 by the American Chemical Society.

Some facts about Chemical Abstracts

Types of resource included:

- *Journal articles*
- *Conference proceedings*
- *Collections of papers*
- *Technical reports*
- *Dissertations*
- *New books*
- *Patents*

Abstracts 555,000 documents per year
Covers 14,000 journals in over 50 languages,
Patents from 28 countries.

Scope:

All aspects of chemistry and chemical technology

WEEKLY ISSUES

Chemical Abstracts is published weekly. Abstracts in the weekly issues are divided into a total of 80 subject sections, as follows:

Week 1, 3, 5 etc. (Odd-numbered issues)	Sections 1 - 20	Biochemistry
	Sections 21 - 34	Organic Chemistry
Week 2, 4, 6 etc. (Even-numbered issues)	Sections 35 -46	Macromolecular Chemistry
	Sections 47 - 64	Applied Chemistry and Chemical Engineering
	Sections 65 - 80	Physical and Analytical Chemistry

Each weekly issue has four indexes, namely:

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(i) Author index. Entries for authors and co-authors and patent assignees. (See example E, page 164.)

(ii) Keyword subject index. Based on document titles. (See example H, page 165.)

(iii) Patent index. Indexes patents in order of country and then numerically. Inventions are often patented in several countries. Chemical Abstracts publishes an abstract only for the first version of a patent it receives. If you know the patent number assigned to the invention in another country, you can use the patent concordance to find the Chemical Abstracts abstract for the equivalent patent. (see Example D, p.164.)

Based on its subject, each CA abstract is assigned to one of 80 sections and is printed only once. The section titles are:

Biochemistry Sections

1. Pharmacodynamics
2. Hormone Pharmacology
3. Biochemical Interactions
4. Toxicology
5. Agrochemicals
6. General Biochemistry
7. Enzymes
8. Radiation Biochemistry
9. Biochemical Methods
10. Microbial Biochemistry
11. Plant Biochemistry
12. Nonmammalian Biochemistry
13. Mammalian Biochemistry
14. Mammalian Pathological Biochemistry
15. Immunochemistry
16. Fermentations
17. Foods
18. Animal Nutrition
19. Fertilizers, Soils, and Plant Nutrition
20. History, Education, and Documentation

Organic Chemistry Sections

21. General Organic Chemistry
22. Physical Organic Chemistry
23. Aliphatic Compounds
24. Alicyclic Compounds
25. Noncondensed Aromatic Compounds
26. Condensed Aromatic Compounds
27. Heterocyclic Compounds (One Hetero Atom)
28. Heterocyclic Compounds (More Than One Hetero Atom)
29. Organometallic and Organometalloidal Compounds
30. Terpenoids
31. Alkaloids
32. Steroids
33. Carbohydrates
34. Synthesis of Amino Acids, Peptides, and Proteins

Macromolecular Chemistry Sections

35. Synthetic High Polymers
36. Plastics Manufacture and Processing
37. Plastics Fabrication and Uses
38. Elastomers, Including Natural Rubber
39. Textiles
40. Dyes, Fluorescent Whitening Agents, and Photosensitizers
41. Leather and Related Materials
42. Coatings, Inks, and Related Products
43. Cellulose, Lignin, Paper and Other Wood Products
44. Industrial Carbohydrates
45. Fats and Waxes
46. Surface-Active Agents and Detergents

Applied Chemistry and Chemical Engineering Sections

47. Apparatus and Plant Equipment
48. Unit Operations and Processes
49. Industrial Inorganic Chemicals
50. Propellants and Explosives
51. Fossil Fuels, Derivatives and Related Products
52. Electrochemical, Radiational, and Thermal Energy Technology
53. Mineralogical and Geological Chemistry
54. Extractive Metallurgy
55. Ferrous Metals and Alloys
56. Nonferrous Metals and Alloys
57. Ceramics
58. Cement and Concrete Products
59. Air Pollution and Industrial Hygiene
60. Sewage and Wastes
61. Water
62. Essential Oils and Cosmetics
63. Pharmaceuticals
64. Pharmaceutical Analysis

Physical and Analytical Chemistry Sections

65. General Physical Chemistry
66. Surface Chemistry and Colloids
67. Catalysis and Reaction Kinetics
68. Phase Equilibriums, Chemical Equilibriums, and Solutions
69. Thermodynamics, Thermochemistry, and Thermal Properties
70. Nuclear Phenomena
71. Nuclear Technology
72. Electrochemistry
73. Spectra by Absorption, Emission, Reflection, or Magnetic Resonance, and Other Optical Properties
74. Radiation Chemistry, Photochemistry, and Photographic Processes
75. Crystallization and Crystal Structure
76. Electric Phenomena
77. Magnetic Phenomena
78. Inorganic Chemicals and Reactions
79. Inorganic Analytical Chemistry
80. Organic Analytical Chemistry

Table 3 : Chemical Abstracts Sections

SEMIANNUAL VOLUMES

The weekly issues are cumulated into two volumes per year. Each semi-annual index has its own cumulated indexes, some of which are different from the weekly indexes:

(i) Author index. As in weekly issues.

(ii) Patent index. As in weekly issues.

(iii) Chemical substance index. Contains entries for all completely defined chemical substances - that is, those whose formula and chemical structure is known. For example, individual elements, compounds, alloys, minerals, hormones, chemical products, drugs, etc. Strictly controlled vocabulary is used: you must know the official Chemical Abstracts index name (see example F, page 165).

Example:

Common names:	*Valium* *Diazepam*
Chemical Abstracts index name:	*2H-1, 4-Benzodiazepin - 2 - one, 7-Chloro - 1, 3-dihydro-1- methyl-5- phenyl*

(iv) General subject index. Contains all subject entries which cannot go in the Chemical Substance Index. For example, whole classes of chemical substances, animals, processes, application, properties of substances, concepts. (See example G, page 165).

(v) Formula index. Contains entries for all chemical substances by their chemical formula (in Hill order). (See example J, page 166).

There are two other volume indexes which we shall not discuss in detail:[1]

(vi) Index of Ring Systems

(vii) Hetero-Atom-in-Content (HAIC) Index. (1967-1971 only).

---

[1] They are described in

CAMPBELL, M. A descriptive guide to the organisation, development and use of Chemical Abstracts and its associated indexes. Nathan: Griffith Univ. Libr., 1977. (Shelved with Chemical Abstracts at UNSW).

COLLECTIVE INDEXES

As well as semiannual indexes, there are multi-year indexes:

1st - 5th ten-year indexes (1907-1956)
5th - 9th five-year indexes (1957-76)

There were fewer types of index in the earlier period. For example, before 1972 there is one subject index, which covers both chemical substances and the entries now found in the General subject index.

The indexing terminology varies in different indexing periods. There are particularly large differences between the pre-1972 and post-1972 indexes.

1907 -	Author Index		
1907 -	Subject Index	split 1972	General Subject Index Chemical Substance Index
1916 -	Index of Ring Systems		
1920 -	Formula Index		
1937 -	Numerical Patent Index		
1963 -	Patent Concordance		
1967 - 71	Hetero-atom-in-context (HAIC) index		
1967 -	Index Guide		
1981 -	Patent index (combines the Numerical Patent Index and the Patent Concordance)		

Table 4 : Availability of Chemicals Abstracts Indexes

AIDS IN SEARCHING CHEMICAL ABSTRACTS

Two companion publications are particularly important:

(i) Index Guide. Contains cross references from popular names, or other forms of names, to the Chemical Abstracts index name. Also contains notes on indexing policy. (See example C, page 164)

N.B. The Index Guide is not a complete list of all index names and indexing terms. Not finding a term there does not necessarily mean that it is not used in the indexes.

There are Index Guides for the 8th and 9th collective indexes. There are also supplements containing recent changes.

(ii) Chemical Abstracts Service Source Index (CASSI)
Gives full titles for the journals and other documents which are listed in abbreviated form in Chemical Abstracts. (See example I, page 166). Also includes much other useful information, for example publisher, price, language, frequency, changes of title, and selected library holdings. Cumulation 1907-1979, with quarterly supplements.

CHEMICAL ABSTRACTS REGISTRY NUMBERS

During the 1960s the Chemical Abstracts service developed a computer-based system which assigns a unique registry number to each completely defined substance. These registry numbers are increasingly being used in the literature of chemistry to unambiguously identify chemical substances.

There is no printed index which enables you to search for a substance using its registry number. (You can do this in computer searching.) However, registry numbers are very useful in enabling you to be sure that the substance being referred to is the one you are interested in. Registry numbers are included in the Chemical Substance and Formula Indexes. (See example F, page 165 and example J, page 166). To obtain the registry number consult the Index Guide.

Registry Handbook. Arranged by registry number, gives index name and formula for each substance to which a registry number has been assigned. (See example K, page 166).

COMPUTER SEARCHING OF CHEMICAL ABSTRACTS

Like most major abstracting services, Chemical Abstracts can be searched by computer. A number of information services provide access to the Chemical Abstracts data base, for example Dialog, Orbit, and the Chemical Abstracts Service.

EXAMPLES OF ABSTRACTS AND INDEX ENTRIES FROM CHEMICAL ABSTRACTS

(These examples will be used to illustrate class discussion of Chemical Abstracts.)

1

2

14037h **Measuring the volume of finishing solutions in the material.** Borivoj Ludvik. Czech. 119,452 (Cl. G 01*n*), Aug. 15, 1966, Appl. Aug. 31, 1961, 4 pp. The amt. of the liquid and agent present in the material (textile sizes, paper dressings, etc.) is estd. from a comparison between the elec. cond. of a known vol. of the soln. and that of a defined surface of the material. It is measured with a pair of identical electrodes of which 1 is immersed into the reference soln. and the other pressed onto the material. The detn. is sufficiently rapid to permit a continuous control of the manufg. process. L. J. Urbanek

14038j **Apparatus for stretching and stabilizing of synthetic fabrics.** Antonin Kovarik, Josef Cip, Karel Mynar, and Borivoj Ptacek. Czech. 119,968 (Cl. D 06*b*), Sept. 15, 1966, Appl. Jan. 14, 1965; 3 pp. Addn. to Czech. 114,455. The equipment consists of a system of feeding and drawing rollers, continuous conveyer belt, heated sections with arched heating plates of different radii of curvature depending on tension changes of the textile, and of an adjustable cross stretcher of the textile. The first heating plate and the cooling plate have the greater curvature because of the greatest tension release of warp threads in this section. The equipment removes the undesirable transitions between operations where the shape changes might take place. J. Stehlicek

A Abstracts for patents (Even-numbered weekly issue.)

3

40487g **Potassium content of the procine body and carcass at 23, 46, 68 and 91 kilograms live weight.** Stant, E. G., Jr.; Martin, Truman G.; Kessler, Wayne V. (Purdue Univ., Lafayette, Indiana). *J. Anim. Sci.* 1969, 29(4), 547–56 (Eng). The K content, as estd. by whole body counting, of the live pig, carcass, and offal increased at a slower rate than did their respective wts. Total variation was greatly reduced when K concn. was expressed as g. of K/kg fat-free tissue, g K/kg fat-free dry tissue, or mg K/g of protein. Concns. of K in separable fat and bone were lower than in muscle. As wt. increased a higher proportion of total carcass K was found in the muscle. The failure of K to maintain a constant relation with other chem. constituents from one type of tissue to another and from one wt. to another is considered a major factor leading to inaccuracies assocd. with this technique. R. J. Davey

4

5

40488h **Inorganic constituents in dental plaque.** Ossen, Poul; Yao, K.; Spinelli, M. (Forsyth Dent. Center, Boston, Mass.). *J. Dent. Res.* 1969, 48(5), (Pt. 1), 799–805 (Eng). An exptl. intraoral device permitting plaque formation under standardized conditions is described. Exptl. plaque had a lower percentage dry wt. than natural plaque. Ca, Mg, and inorg. P levels were similar in 4-day-old exptl. plaque and natural plaque. The inorg. compn. of plaque was identical when formed in the presence and absence of dental enamel. Plaques formed in the presence of shark enamel did not differ significantly from those formed on human enamel. Available F was readily incorporated in plaque. Significant amts. of F were incorporated in exptl. plaque treated with $TiCl_4$ + acidified phosphate fluoride. Buccal plaque contained ~84% moisture. Ashed and unashed samples had identical F contents. Three-day-old dental plaque contained 17 μg Ca, 1.5 μg Mg, and 13 μg P/mg dry wt. The F content was 25 ppm (dry wt.). Fluorapatite formation may be a mechanism of F binding by dental plaque. D. V. Siva Sankar

6

B Abstracts for journal articles (Odd-numbered weekly issue.)

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Valrubs

Valinenitrile
See *Butanenitrile, 2-amino-3-methyl-* [4475-96-1]

Valisone
See *Pregna-1,4-diene-3,20-dione, 9-fluoro-11,21-dihydroxy-16-methyl-17-[(1-oxopentyl)oxy]-, (11β,16α)-* [2152-44-5]

Valitocin
See *Oxytocin, 8-L-valine-* [3275-87-4]

Valium
See *2H-1,4-Benzodiazepin-2-one, 7-chloro-1,3-dihydro-1-methyl-5-phenyl-* [439-14-5]

Vallarose
See *Altrose, 6-deoxy-3-O-methyl-* [25376-97-4]

2H-1,4-Hexandiazepin-2-one
—, 7-bromo-1,3-dihydro-5-[2-pyridinyl]- (bromazepam) [1812-30-2]
—, 7-chloro-5-(1-cyclohexen-1-yl)-1,3-dihydro-1-methyl- (clurazepam) [10079-54-0]
—, 7-chloro-1-(cyclopropylmethyl)-1,3-dihydro-5-phenyl- (prazepam) [2955-38-6]
—, 7-chloro-1-[2-(diethylamino)ethyl]-5-(2-fluorophenyl)-1,3-dihydro- (flurazepam) [17617-23-1]
—, 7-chloro-1-[2-(diethylamino)ethyl]-5-(2-fluorophenyl)-1,3-dihydro-, dihydrochloride (flurazepam hydrochloride) [1172-18-5]
—, 7-chloro-1,3-dihydro-1-methyl-5-phenyl- (diazepam) [439-14-5]
—, 7-chloro-1,3-dihydro-5-phenyl-, 4-oxide (clermazepam) [5965-49-3]
—, 7-chloro-1,3-dihydro-5-phenyl-1-(2,2,2-trifluoroethyl)- (haloxazepam) [23092-17-3]
—, 7-chloro-1-[(dimethylphosphinyl)methyl]-1,3-dihydro-5-phenyl- (fosazepam) [35822-46-7]
—, 1,3-dihydro-7-nitro-5-phenyl- (mogadon) [146-22-5]
—, 5-(2-fluorophenyl)-1,3-dihydro-1-methyl-7-nitro- (flunitrazepam) [1622-62-4]
5H-[2,3]Benzodiazepino[4,5-b]quinoline
See *5H-Quino[2,3-d][2,3]benzodiazepine* [216-92-2]

C Index Guide

NO.	REF
AUSTRALIAN	
404279-	44309k
291-	66454h
445-	67158a
487-	649696
636-	378044
812-	68444r
930-	64034v
982-	65462y
408034-	59736w
112-	386072
329-	431096
358-	38482r
536-	386033
875-	45771s
406139-	100174b
194-	152900e
528-	100958h
919-	100684t
407328-	100171y
825-	106314u
908-	100157y
409724-	119920p
410008-	154093k
913-	150597n
AUSTRIAN	
261087-	67153u
285583-	35414p
286517-	9299k
288610-	20784k
686-	7584a
710-	68469b
289168-	39440a
170-	39477j
269-	30537z
803-	394677
715-	23328a
503-	154545e
1183044-	157049u
1185200-	48449d
1193168-	151800n
1196029-	134927q
1197306-	135808p
1200806-	154990h
1205287-	804066
1206126-	116128z
492-	110047b
839-	48472f
1207725-	3827k
1208863-	140251f
1209142-	125068h
647-	123086q
668-	38802p
670-	8028j
904-	5229p
946-	9839w
1210808-	9505z
848-	20183p
1211258-	8737d
293-	12288m
625-	21006r
1212119-	9876w
466-	5476t
986-	12355f
1213208-	9666c
283-	5292e
520-	35143b
647-	14328w
847-	5301g
872-	19687z
1214109-	5910e
187-	25195d
192-	6142t
256-	65301s
408-	5945v
409-	5950t
436-	20559a
1215031-	4-mv

D Numerical patent index

Smith, Gloria L.
—, Herr, J. J.; Wakerling, R. K.
SDI system based on NSA magnetic tapes. User profiling and the implications of decentralized indexing, 84067m
Smith, Gordon Mellis See Halter, F.
Smith, George Norbury
—, De Silva, K. T. D.; King, D.
5α-Carboxystrictosidine, 130089p
—, De Silva, K. T. D.; Warren, K. E. H.
Stereochemistry of strictosidine, 130058j
Smith, George Pearson
—, Hood, L.; Fitch, W. M.
Antibody diversity, 104995t
Smith, Gary Reed
Search for the double beta decay of neodymium-150 using a magnetic spectrometer-detector, 146378x
Search for the double beta decay of neodymium-150 using a magnetic spectrometer, 146468d
Smith, Gerald R. See Hong, Jen-Shiang
—, Halpern, Y. S.; Magasanik, B.
Genetic and metabolic control of enzymes responsible for histidine degradation in Salmonella typhimurium. 4-Imidazolone-5-propionate

E Author index

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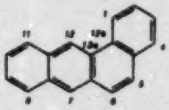
F Chemical substance index

Benzamide-carbonyl-^{13}C
—, *N*-chloro-*N*-hydroxy- [85884-18-9], 154807h
Benzamide-carbonyl-^{14}C
—, *N*-[2-(3,4-dimethoxyphenyl)ethyl]-3,4-dimethoxy- [55323-22-3]
prepn. and cyclization of, 43625t
Benzamide-*N*-*d*
—, *N*-(1,1-dimethylethyl)-4-nitro- [54284-30-9]
prepn. and mass spectrum of, 57308d
Benzamide-4-*d* [32576-58-2]
111365k
Benz[*a*]anthracene [56-55-3]



86243j
air pollution by, aerosol particle size distribution in relation to, 144445q
aryl hydrocarbon hydroxylase induction by carcinogenesis in relation to, 107296w
in skin, 108372a
aryl hydrocarbon hydroxylase of monocytes in response to, 55103j
benzpyrene hydroxylase induction by, in human skin, 984s
carcinogenic activity of, enthalpy of formation in relation to, 81492e
carcinogenic activity of benzopyrene and, 107293t
carcinogenicity of, in respiratory tract, 150251q
catalysts, for acetolysis of trinitrofluorenyl toluenesulfonate, 85650c

Heat of compression
of hafnium and zirconium tetrachlorides, 153540q
Heat of conformational inversion
of acrylyl fluoride, 68585g
of alkylammonium ions in alkanol mols. between silicate layers, 205657e
of *O*-aryl *N*-alkylphosphoramidothioates, calcns. for, 96173w
of aza- and thiabarbaralanes, 78403a
of α-cyano-1-methylcyclohexaneacetic acid and derivs., 178095m
of cyclooctadiene and dibenzocyclooctadiene, 68656c
detn. from magnetic relaxation studies, errors in, 105851v
of ethanol and ethanethiol, 18344p
of 1-ethyl-1,3-dithianium tetrafluoroborate, 163491p
gauche-trans, of bicyclopropyl, 178133x
of iron carbonyl complexes with olefinic aldehydes, 89420w
of poly(ethylene oxide) and model compds., 115158p
of propionyl halides, 113222f
of tetraalkylhydrazine radical cation, 139529m
of tetrasilane and pentasilane, 35373q
Heat of coordination
B 33867m
of aluminum and beryllium and chromium, with lactic and propionic acids, 169184c
of aluminum bromide
with arom. and aliph. selenides, 169237g
with diphenyl ethers, 66555e
of aluminum chloride, with vanadium chlorides, 137745e
of aluminum cobalt chloride complex in gas phase, 49073d
of aluminum halides or iron chloride, with other metal chlorides, volatility in relation to, R 121435t
of antimony fluoro-hydroxy complexes, in aq. soln., 104225g
of bases to low-spin planar nickel complexes with four sulfur-donor atoms, 66472a
in bromomicate formation in org. solvents, solvent basicity in relation to, 21096q
of cadmium, with imidazole, 104198a
calcn. of
for 2-species equil. asymmetric mech. 4-4

G General subject index

Glass phosphorus etching semiconductor 114112s
Glass photochromic 112450b
Glass photochromic kinetics 114784n
Glass photochromic silver detn 112344v
Glass plastic coating 111050j
Glass recovery review 112637t
Glass reinforced nylon molding 110838k
Glass reinforced plastic hollow fiber 110776p
Glass reinforced polyesters book 110792r
Glass reinforced thermoplastic laminate 110850h
Glass reinforced viscoelastic composite 110775n
Glass reinforced viscoelastic material 110773k
Glass review 112323n
Glass semiconductive 112471j
112472k
Glass sheet support 112458k
Glass silicate 112448g
Glass silicate alumina baria boron 112340r
Glass silicate amber 112343u
Glass silicate crit current density 112347y
Glycerato lead complex polarog 113265g
Glyceride chromatog sepn 111120g
Glycerol polymer breakdown 110779s
Glycerol proton spin relaxation 114611d
Glycidyl acrylate copolymer adhesive 110879x
Glycidyl ester prepolymer 110802u
Glycidyl halomethylvinyl ether polymer 110914g
Glycidyl hydantoin epoxy resin 110794t
Glycidyl methacrylate graft copolymer 110738c
Glycol ether antismoke diesel 111513n
Glycol ether Freon absorption refrigeration 111228y
Glycol ethylene capacitor 114090h
Glycolide ring opening polymn 110631n
Glycolides polymn ring opening 110631n
Glycol phosphorus halide polymer 110702m
Glycols recovery valuable chems 112631m

H Key-word subject index (Weekly issue)

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CSIRO Minerals Research Laboratories, Investigation Report. CMIRBU (Formerly CSIRO Div. Miner. Chem., Invest. Rep.) In Eng. [Occas sum.] n99 S, 1971+. [Some numbers issued by the laboratories' various divisions or sections.] *irr* n99 1973. Npg. *CSIRO*.
AUSTRALIA. COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANIZATION. MINERALS RESEARCH LABORATORIES. INVESTIGATION REPORT. EAST MELBOURNE.
PBL, GbLC

Current Research in Oncology, *Based on a Series of Lectures, National Institutes of Health, Bethesda, Md., Ja, 1972* (Pub 1973). 25YYAZ. In Eng. Ed: Anfinsen, C. B.; Potter, Michael and Schechter, Alan N. $6.95. *Academic (New York)*.
CURRENT RESEARCH IN ONCOLOGY. 1973. 1973.
DLC

Current Topics in Comparative Pathobiology. CCPBBF. In Eng; Eng sum. v1 1971+. *irr* 2 1973. Price varies. *Academic (New York)*.
CURRENT TOPICS IN COMPARATIVE PATHOBIOLOGY. NEW YORK.
CSt, CoFS, CtY, MiU, DLC, DeU, FTaSU; GU, IdCJ, IU, MoKL; RPB; TaHMC; TaU; AuMU

Cycling and Control of Metals, *Proceedings of an* Environmental Resources Conference, *Columbus, Ohio, Oc 31-N 2, 1972* (Pub 1973). 28FCAH. In Eng. [Occas sum.] Comp: Curry, Marion G. and Giglotti, Gilbert M. Npg. *U. S. Environmental Protection Agency, National Environmental Research Center, Cincinnati, Ohio 45268*.
UNITED STATES. ENVIRONMENTAL PROTECTION AGENCY. NATIONAL ENVIRONMENTAL RESEARCH CENTER. CYCLING AND CONTROL OF METALS. PROCEEDINGS OF AN ENVIRONMENTAL RESOURCES CONFERENCE, COLUMBUS, OHIO, 1972. 1973.

Delft Progress Report, Series C: *Mechanical and Aeronautical Engineering and Shipbuilding.* DPRCDS. In Eng; Eng sum. v1 nl D, 1973+. *irr* [Ja/y] 1 1973. DFL 72.v. *Academic Book Services Holland, P.O.B. 98, Groningen, Neth.*

I CASSI

$C_{21}H_{18}N_2O_8U$
Uranate(1-), bis[2-aminobenzoato-*N*,*O*](2-aminobenzoato-*O*)dioxo-, hydrogen [*54360-88-2*], 36990e
$C_{21}H_{18}N_4$
Benzo[c]cinnolinium, 5-[[(ethylamino)phenylmethylene]amino]-, hydroxide, inner salt [*54507-84-3*], 72909u
Benzo[1,2-c:3,4-c']dipyrazole, 1,4,5,6-tetrahydro-6-8-methyl-1,6-diphenyl- [*54317-06-5*], 4172v, 43247w
[1,1'-Biphenyl]-2-amine, 2'-(5-methyl-3-phenyl-1*H*-1,2,4-triazol-1-yl)- [*54507-86-7*], 72909u
Formazan, 1,5-diphenyl-3-(2-phenylethenyl)- [*54840-36-7*], 97219g
1-Naphthalenemethanamine, 3-[(4-amino-1-naphthalenyl)azo]- [*55115-62-3*], P 134925g
1,8-Naphthyridine-2,7-diamine, *N*²-(4-methylphenyl)-4-phenyl- [*55242-92-7*], 156151d
Propanedinitrile, [4-[cyano(4-(diethylamino)phenyl]methylene]-2,5-cyclohexadien-1-ylidene]- [*52687-18-6*], 30663d
5*H*-Pyrrolo[3,4-*b*]pyridin-7-amine, *N*-(4-methylphenyl)-5-[(4-methylphenyl)imino]- [*54118-46-6*], 74422d, 97243k
$C_{21}H_{18}N_4O$
1*H*-Benzimidazole, 2,2'-(1-methoxy-1-buten-3-yne-1,4-diyl)bis[1-methyl- [*55548-62-4*], 140006b
1,8-Naphthyridine-2,7-diamine, *N*²-(4-methoxyphenyl)-4-phenyl- [*55242-93-8*], 156151d
2-Propanone, 1-(1-methyl-1*H*-pyrazolo[3,4-*d*]pyrimidin-4-yl)-1,3-diphenyl- [*54416-45-4*], 43318v

J Formula Index

ester $C_{21}H_{18}F_3O_2P$
36850-76-0 Phosphine oxide, (*p*-chlorophenyl)ethyl- $C_{14}H_{16}ClOP$
36850-77-0 Crotonic acid, 2-cyano-3-[(dichlorophenylphosphoranylidene)amino]-4,4,4-trifluoro-, ethyl ester $C_{12}H_{10}Cl_2F_3N_2O_2P$
36850-78-0 5,5'-Spirobi[5*H*-dibenzo[*b*,*d*]pyran]-6-[2'-(5*H*-dibenzo[*b*,*d*]pyran-5-yl)-2-biphenylyl]- $C_{49}H_{30}O_4$
36850-81-4 Europium imide (Eu(NH)) $EuHN$
36850-82-5 Acetophenone, 3'-[[8-(2,4-dihydroxycinnamoyl)-5,7-dihydroxy-2,2-dimethyl-2*H*-1-benzopyran-6-yl]methyl]-2',4',6'-trihydroxy-6'-methyl- $C_{30}H_{28}O_9$
36850-83-7 Tartaric acid, diantimonate, (-)-, compd. with (-)-2,3,5,6-tetrahydro-6-phenylimidazo[2,1-*b*]thiazole (1:1) $C_{12}H_{12}O_6.C_{11}H_{12}N_2S$
36850-86-0 18,19-Dinor-17α-preg-5(10)-en-20-yne-3*β*,17-diol, 17-ethyl- $C_{23}H_{36}O_2$
36850-87-1 2*H*-Pyran-2-carboxylic acid, 6-[(11*β*,17-dihydroxy-9,20-dioxopregna-1,4-dien-21-yl)oxy]-3,4-dihydro-2-methyl- $C_{28}H_{34}O_8$
36850-88-2 2*H*-Pyran-2-carboxylic acid, 3,4-dihydro-2-methyl-6-[(3-oxoandrost-4-en-17*β*-yl)oxy]- $C_{25}H_{34}O_5$

K Registry Handbook

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4.3.1.2 Other abstracting and indexing services

While Chemical Abstracts is the most significant abstracting and indexing service for chemistry, it is not the only one. More specialised services exist in particular branches of chemistry. For example:

> Analytical abstracts. V.1 - ; 1954- . Cambridge, Mass., Society for Analytical Chemistry. A monthly publication dealing with all branches of analytical chemistry.

You can find other examples in guides to the literature or by scanning the shelves in the reference collection at the University of New South Wales.

4.3.2 Current awareness services

Researchers in chemistry need to know about new developments quickly. Abstracting and indexing services may not be published promptly enough to help them keep up-to-date.

Examples of information resources specially designed to alert researchers quickly to new publications are:

UNSW P REF 540.5 35
Chemical titles. V.1 - ; 1960- . Columbus, Ohio. American Chemical Society. Comprises author and keyword subject indexes to articles in about 100 chemical journals. The articles will later be abstracted in Chemical Abstracts.

UNSW P REF 505 110.
Current contents; physical, chemical and earth sciences. V1 - ; 1961- . Philadelphia, Pa., Institute for Scientific Information. A weekly publication which covers approximately 725 journals in the physical and chemical sciences. Consists of photocopies of title pages of new journal issues, with indexes.
Examples in lab

UNSW P REF 540.5 32
Current abstracts of chemistry and index chemicus. V.1 - ; 1960- . N.Y., Institute for Scientific Information. A weekly guide to chemical research and chemical technology which reports on the synthesis, isolation and identification of new compounds.

Current awareness services can also be computer-produced. For example, from the Chemical Abstracts Service, individuals or companies can purchase their own "customer-defined" current awareness service, which provides lists of references and abstracts according to a unique "profile" of their interests.

Alternatively, Chemical Abstracts Service sells current awareness services in specific areas of chemistry. Examples of topics available are:

Drug and cosmetic toxicity

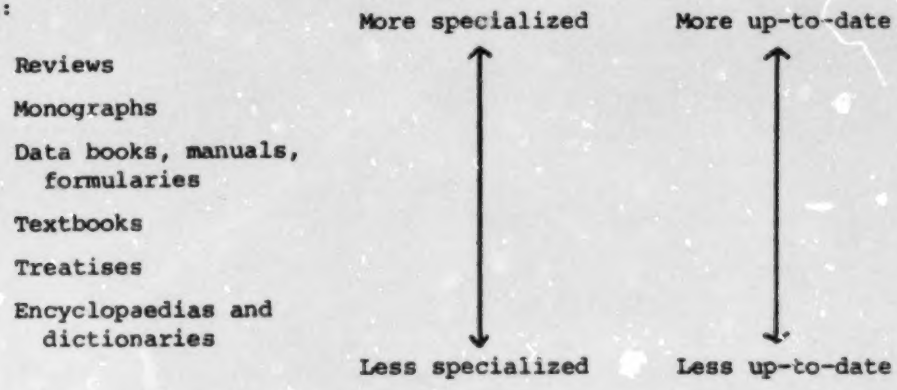
Herbicides

Organophosphorus chemistry

Recovery and recycling of wastes

4.4. Supporting and synthesizing resources

These are resources in which the more important research results are summarized, consolidated, and made more easily accessible. They are written at various levels, and for various purposes. The more important types are:



4.4.1. Reviews

Reviews summarize and comment on recent developments in a subject. Often published by the chemical societies, they are extremely important for offering state-of-the-art overviews of various aspects of chemistry. Some are general in nature, including reviews on all topics within chemistry.

Annual reports on the progress in chemistry. V.1 - ; 1905 - . London, Chemical Society.

Chemical reviews. V.1 - ; 1924 - . Washington, D.C., American Chemical Society.

Others are more specialized. For example, the Chemical Society publishes a series of annual or biennial Specialist periodical reports on topics such as:

Amino-acids, peptides and proteins
Nuclear magnetic resonance
etc.

4.4.2 Monographs

Monographs cover a single topic in some depth. While they may not contain the latest information available in journal articles, they have the advantage of offering more complete information on the topic. Monographs published by firms which specialize in chemistry - for example, Pergamon, McGraw-Hill - are likely to be well-respected and authoritative.

4.4.3 Data books, manuals, handbooks, formularies and data banks

Chemists make much use of data of various kinds. For example, they may need to know

- the chemical properties of an element or substance (molecular weight, solubility, etc.)
- how to make particular substances
- standard methods of analyzing and testing, etc.

Data books, handbooks, etc. are often arranged in tabular or graphic form. Some important ones are:

UNSW P REF 540.205 1	Handbook of chemistry and physics; a ready-reference book of chemical and physical data. Ed. 1- ; 1913- . Cleveland, Ohio, Chemical Rubber Co. A very important reference tool.	R540.202 ANN 1
UNSW P REF 540.2 2 H	LANGE, Norbert. Lange's handbook of chemistry, ed. by J.A. Dean. 11th ed. N.Y., McGraw-Hill, 1973.	R540.2 L 1
UNSW P REF 614.8 8 F	SAX, N.I. Dangerous properties of industrial materials. 5th ed. N.Y., Van Nostrand Reinhold, 1979.	614.8 S 2

UNSW P REF 660.3 54

The Merck index: an encyclopedia of chemicals and drugs, ed. P.G. Stecher. 9th ed. Ralway, N.J., Merck, 1976.

R615.103 MER 1

An extremely useful publication which deals with the preparation and properties of some 10,000 chemicals and drugs. It has an index of formulae, American trade names, etc. It deals primarily with medicinal chemistry.

Formularies give directions for making products, or performing reactions. They are often for industrial or popular use. For example:

UNSW P REF 660.83 2

Chemical formulary: a collection of valuable, timely, practical commercial formulae and recipes for making thousands of products in many fields of industry. Ed. by H. Bennett. V.1 - ; 1933- . Brooklyn, N.Y., Chemical Pub. Co.

Chemical data can also be obtained from on-line factual data bases. Some of these are in-house systems, available only to people working for the company. Others are more widely available and offer searches for a fee. Examples of on-line data bases maintained by the CSIRO are:

Mass spectral search system. Available to CSIRO scientists and a few paying customers. Spectral data is used in identifying chemical substances - e.g. analyzing swabs in horse doping tests.

Cambridge crystallographic data system. Contains crystal structures of compounds, and literature references.

Australian wine data. At planning stage.

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TOXICOLOGY DATA BANK

00025695 PAGE 1

ARSINE

1	NAME OF SUBSTANCE	ARSINE
	MOLECULAR FORMULA	AS-H3
	CAS REGISTRY NUMBER	7784-42-1
	TDB NUMBER	0510
	MOLECULAR WEIGHT	77.93
	WISWESSER LINE NOTATION	AS H3
	SYNONYMS	ARSENIC HYDRIDE
	SYNONYMS	ARSENIC TRIHYDRIDE
	SYNONYMS	ARSENIURETTED HYDROGEN
	SYNONYMS	ARSENOUS HYDRIDE
	SYNONYMS	HYDROGEN ARSENIDE
	SYNONYMS	ARSENOWODOR (POLISH)
	SYNONYMS	ARSENWASSERSTOFF (GERMAN)
	MAJOR USE	ENCYC OCCUPAT HEALTH & SAFETY 1971 118 THERE ARE NO INDUSTRIAL PROCESSES USING ARSINE
	MAJOR USE	SRI DOPING GAS USED IN MFR OF SOLID STATE READ-OUT DEVICES
	MAJOR USE	SRI DOPING GAS USED IN MFR OF INTEGRATED CIRCUITS
	MELTING POINT	-116.3 DEG C
	BOILING POINT	-55 DEG C
	DENSITY/SPEC GRAVITY	3.484 G/L
	ANTIDOTE & TREATMENT	ARENA. POISONING 3RD ED 52 ARSINE IS ONE OF THE KNOWN DIALYZABLE COMPOUNDS.
	ANTIDOTE & TREATMENT	ENCYC OCCUPAT HEALTH & SAFETY 1971 118 SOME VERY SEVERE CASES HAVE BEEN TREATED SUCCESSFULLY BYMASSIVE BLOOD TRANSFUSIONS AND PROLONGED ARTIFICIAL DIALYSIS. IN THE OPINION OF MOST CLINICIANS WITH EXPERIENCE IN TREATING CASES BALIS OF LITTLE IF ANY VALUE.
	COLOR/FORM	COLORLESS GAS
	STABILITY/SHELF LIFE	ON EXPOSURE TO LIGHT, MOIST ARSINE DECOMPOSES QUICKLY DEPOSITING SHINY BLACK ARSENIC
	SOLUBILITY	SLIGHTLY SOL IN WATER
	SOLUBILITY	SLIGHTLY SOL IN ETHYL ALCOHOL, ALKALIES
	SOLUBILITY	20 ML IN 100 ML OF WATER AT 24 DEG C
	SPECTRAL & OTHER PROPS	SAX. DANGER PROPS INDUS MATER 3RD ED 439 VAPOR DENSITY: 2.66
	SPECTRAL & OTHER PROPS	MERCK INDEX 8TH ED 103 DISSOCIATION PRESSURE @ 0 DEG C: 0.906 ATM
	SPECTRAL & OTHER PROPS	SAX. DANGER PROPS INDUS MATER 4TH ED 423 MILD GARLIC ODOR
	SPECTRAL & OTHER PROPS	MERCK INDEX 8TH ED 103 AQUEOUS SOLUTIONS ARE NEUTRAL
	SPECTRAL & OTHER PROPS	MERCK INDEX 8TH ED 103 DECOMPOSES WHEN HEATED @ 300 DEG C, DEPOSITING ARSENIC WHICH VOLATILIZES AT 400 DEG C
	TOXICITY VALUES	NIOSH. REG TOX EFFECT CHEM SUB 1976 128 LC50 MAMMALS INHALATION 500 MG/KG
	MANUFACTURING INFO	ENCYC OCCUPAT HEALTH & SAFETY 1971 118 PREPARATION: (A) BY REDUCTION OF ARSENIC COMPOUND. THIS IS USUALLY EFFECTED BY NASCENT HYDROGEN PRODUCED BY THE ACTION OF DILUTE MINERAL OR OTHER ACIDS ON CERTAIN METALS IN...PRESENCE OF...COMPOUND OF ARSENIC.
	MANUFACTURING INFO	ENCYC OCCUPAT HEALTH & SAFETY 1971 118 PREPARATION (B) BY HYDROLYSIS OF CERTAIN METALLIC ARSENIDES SUCH AS THOSE OF SODIUM, ZINC AND ALUMINUM. SUCH ARSENIDES MAY BE PRODUCED AS A SIDE REACTION OF SOME OTHER INDUSTRIAL CHEMICAL PROCESS.
	SHIPMENT METHODS	SAX. DANGER PROPS INDUS MATER 4TH ED 423 SHIPPING REGULATIONS: SECTION II. REGULATED BY CG, DOT, IATA.
	SHIPMENT METHODS	NIOSH. REG TOX EFFECT CHEM SUB 1976 103 DOT-- POISON A, LABEL: POISON GAS & FLAMMABLE GAS
	POISONING POTENTIAL	THIENES. CLIN TOX 5TH ED 171 TOXIC DOSE.

Table 5 : Example of printout from a chemical data base

4.4.4 Textbooks

Textbooks are published at different levels for different types of students: they state well-developed and accepted scientific theories and give brief information on more general subjects.

4.4.5 Treatises

Treatises give exhaustive coverage of a particular area of chemistry. They include reviews of the literature, bibliographies, and critical evaluation and interpretation of the information. Often they are multi-volume works.

> 'Decades ago, treatises were attempted for the entire subject of chemistry. No such foolhardy attempt has been made recently.'(1)

Two important treatises which chemists use a great deal are:

BEILSTEIN, F. Handbuch der organischen Chemie.
Reviews the older literature on organic chemistry.

Gmelins Handbuch der anorganischen Chemie. Reviews the literature of inorganic chemistry.

There are a number of guides to using Beilstein and Gmelin, for example:

UNSW P REF 547.02 51 — How to use Beilstein. Frankfurt, Beilstein Institute.

UNSW P REF 546.05 5 — WEISSBACH, O. The Beilstein guide: a manual for the use of Beilsteins handbuch der organischen Chemie.

Also consult the large chart on the shelves near Gmelin at UNSW.

---

(1) A. Antony. Guide to basic information sources in chemistry, p. 177.

Other examples of treatises are:

P REF 546 27 — Comprehensive inorganic chemistry, ed. by J.C. Bailar. Oxford, Pergamon, 1975. 5 vols. — R547 COM 1-5

UNSW P REF 547.03 55 — Dictionary of organic compounds. 4th ed. London, Eyre and Spottiswood, 1965- . 5 vols. + supplS.

More than a dictionary. A very extensive compendium of basic data and information on organic compounds, with literature references. Has a formula index.

4.4.6 Dictionaries and encyclopaedias

These vary greatly according to who they are intended for. Some important examples are:

UNSW P REF 540.3 19 H — The Condensed chemical dictionary, rev. by G.G. Hawley. 9th ed. N.Y., Van Nostrand Reinhold, 1977. — R540.3 CON 1

A very useful compendium of concise information on chemicals, chemical processes and chemical phenomena. Includes trade information, cross references for popular names, etc.

UNSW REF 540.3 47 B (level 2) — The Encyclopedia of chemistry, ed. by C.A. Hampel and G.G. Hawley. 3rd ed. N.Y., Van Nostrand Reinhold, 1973. — R540.3 ENCY 1973

An authoritative, widely used one volume encyclopaedia.

UNSW P REF 660.3 1 F — GARDNER, W. Chemical synonyms and trade names. 8th ed. Oxford, Technical Press, 1978.

There are several comprehensive encyclopaedias covering various aspects of chemical technology, for example:

UNSW P REF 543.003 1 — Encyclopedia of industrial chemical analysis, ed. by F.D. Snell, C.L. Hilton and L.S. Ettre. N.Y., Interscience, 1966-1974. 20 vols.

UNSW P REF 547.84 37 — Encyclopedia of polymer science and technology; plastics, resins, rubbers, fibers. Ed. by H.F. Mark and others. N.Y., Interscience, 1964-1971. 16 vols. + supplS.

UNSW P REF 660.3 54 — Kirk-Othmer encyclopedia of chemical technology. 2nd ed. N.Y., Wiley, 1963-72, 22 vols. plus supplement and index. 3rd ed. in progress, with provisional index.

4.5 Trade literature and directories

Chemists often need information about commercially available chemicals and chemical equipment.

This information can be obtained from trade literature, for example from:

- Advertisements and product information in trade journals
- Catalogues, price lists and advertising material distributed by manufacturers.
- Commercially available compendia of trade literature which are regularly updated. For example:

Australian Engineering Index. Melbourne, Technical Indexes.

Consists of loose-leaf binders containing trade catalogues, data sheets and price lists on engineering materials, components and equipment.

Chemists, like all engineers, often obtain trade information through informal channels, for example:

- Asking a colleague
- Asking the firm's purchasing officer or other staff with special expertise in this area
- Contacting manufacturers
- Contacting trade organizations

Some trade information can be obtained from handbooks, data books and encyclopaedias.

There are also specialized chemical directories, for example:

UNSW P REF 660.5 17 — Australian chemicals guide. 4th ed. Canberra, A.G.P.S., 1979.

UNSW P REF 660.05 1 and 660.02505 2 — Chem sources - Europe and Chem sources - U.S.A. Flemington, N.J., Directories Publishing Co. Annual.

5. STUDY QUESTIONS AND EXERCISES

1. Put these chemical formulae into Hill order -

   Na Cl

   $CH_3\ CH_2\ OH$

   $CH_3\ OCH_3$

   H_2O

2. Many studies of scientists' use of information resources concentrate on pure scientists working in research environments. Remembering what was said in an earlier session about the differences between the pure and the applied sciences, consider whether the results presented in Table 2 on page 151 are likely to be true for chemists working in industry or agriculture. You may like to draw up an alternative ranking for applied chemists.

3. You are a reference librarian in a university library. A chemistry student asks you to show him how to use Chemical Abstracts to find some references on Agent Orange, the herbicide which is said to have damaged the health of soldiers and civilians in Vietnam.

You know that you must find the Chemical Abstracts Index name, so you look in the latest Index Guide and find this.

Agent Orange

See Acetic acid, (2, 4- dichlorophenoxy)-, esters, butyl ester, mixt. with butyl (2, 4, 5- trichlorophenoxy) acetate [39277 - 47 - 9]

You know that you should now look in the Chemical Substance Index for Acetic acid...etc. But it looks awfully complicated. How can you make it easier for yourself?

4. Answer one of the following:

(a) J. Am. Chem. Soc. is the abbreviated title for which journal? How often is it published?

(b) Zh. obshch. Khim. is the abbreviated title for which journal? What language are the articles written in?

5. Choose ONE of the topics (a) - (d).

(a) A research geologist is looking for references to publications on anything to do with the chemistry of a mineral called Titanite. He is only interested, though, in titanite found in Switzerland or Austria. He would like to know what languages the publications are written in.

(b) There is a whole series of adhesives for bonding rubber and metal called Chemlok. A chemical engineer wants any references to publications about Chemlok 220 and Chemlok 236. He would be particularly interested in any patents you can find.

(c) A chemist who is doing research on antibacterial drugs would like references to articles on the effect of the drug Gentamicin on the organism Staphylococcus aureus. He knows the registry number for Gentamicin is 1403-66-3 . He only wants articles in English or French.

(d) A mining engineer would like any references you can find to publications on a mineral called canfieldite. He wants articles in any language. He also wants to know the chemical formula and registry number for canfieldite.

Use the Index guide and 9th Collective indexes to Chemical Abstracts.

(i) List all the relevant search terms in the relevant indexes. (N.B. Which types of index will you use?)

(ii) List five references you consider appropriate. For each one, give

(a) Complete citation. For journals, include full journal title

(b) Chemical Abstracts volume number and abstract number

(c) Type of index, and search term, which led you to this reference

(d) Language of the article

(e) Comment briefly on how you would obtain a copy of the article for the enquirer.

(iii) Comment briefly - no more than two pages - on any problems you found, anything that was particularly interesting about your search, and what you learned from this exercise.

6. A senior high school student wants some information on the chemical composition, and effects, of either Agent Orange or 2, 4, 5-T, or both. Choose some appropriate information resources in which to search for this information.

Your answer should consist of the following sections:

(i) concepts or aspects in the question

(ii) type of information required, limitations on the question and the answer

(iii) actual sources searched. For each source, say why you chose it, what subject headings you used to find the information and what type of information you found. (Important - list only the 4 of 5 best sources used)

(iv) list six references chosen from the above sources. Comment briefly on their suitability for the user.

7. Answer one of the following questions:

(a) Use Current contents to find references to recent articles on yeasts.

(b) Take a recent issue of Chemical titles. Does it index any articles on vulcanization of rubber? Find the complete reference, including exact journal title.

7. (c) Take a recent issue of Current abstracts of chemistry. Does it index any articles reporting research done at Harvard University?

8. Use resources listed in section 4.4.3 to answer one of the following questions:

   (a) Use LANGE to find the chemical formula and density of tapaz.

   (b) What are the chemical symbols for sodium, lead and magnesium?

   (c) The periodic table is arranged in order of the atomic weight of elements. Find a periodic table: which element has the lowest atomic weight?

   (d) Use LANGE or HANDBOOK OF CHEMISTRY AND PHYSICS to find the molecular weight (also called formula weight) of Hg. Is it soluble in hot or cold water?

9. Answer the following questions using resources listed in sections 4.4.6 and 4.4.3.

(a) Are polymer implants in the human body carcinogenic?

(b) What are rare earths? What are they used for?

(c) What is a free radical (in a chemical context!)?

(d) How many isotopes of uranium are there? What are they? Which are naturally occurring, and which artificially?

(e) Find the chemical formula for LSD.

(f) Neville Wran has Teflon in his throat. I know it is some sort of plastic, but what sort, and who makes it?

VII. BIOLOGICAL SCIENCES

Outline of Segment

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1. OBJECTIVES

When you have completed this segment, you should have some answers to questions like these:

i. What is it about biology which distinguishes it from other scientific disciplines?

ii. For what purposes and at what levels may people be interested in biology and its information resources? What are the implications of these various sorts of purpose and level for people who provide information?

iii. What are some of the characteristics of biologists? How do they work, how do they use information?

iv. What are some of the major characteristics of the types of information resource commonly used by biologists and people interested in biology?

v. What are some numerical data bases available in the biological sciences?

You should also have acquired certain skills, in particular:

i. Describe some of the main types of information resource used in biology, their characteristics and what they can be used for.

ii. Select appropriate information resources to answer specific questions in biology.

iii. Use some biological information resources effectively to answer simple enquiries with enough knowledge of the principles of biological taxonomy and nomenclature to enable you to do so.

iv. Use Biological abstracts effectively.

2. BIOLOGY AND BIOLOGISTS

2.1 What is biology?

2.1.1 Defining biology

Biology is a division of the natural sciences dealing with life, in contrast to the physical sciences, which are concerned with inanimate matter. The McGraw-Hill encyclopedia of science and technology defines biology as

> *'The broad general field of knowledge concerned with the study of all aspects of living organisms which can be approached by the methods of natural science'.*

2.1.1 Subdivisions of biology

Traditionally, biology has been divided into

BOTANY - The study of plants, and
ZOOLOGY - The study of animals.

It has also been customary to distinguish between

MORPHOLOGY - The study of the structure of living organisms, and
PHYSIOLOGY - The study of their function.

The broad categories Botany and Zoology can be further divided into the study of more specialized groups of organisms, for example

MAMMALOGY - Study of mammals
ENTOMOLOGY - Study of insects
VIROLOGY - Study of viruses
MYCOLOGY - Study of fungi
HERPETOLOGY -
PHYCOLOGY -

The trend in modern biology is to emphasize those biological phenomena which are common to all living organisms, rather than the differences between them. This interdisciplinary approach produced subdivisions of biology such as

BIOCHEMISTRY - Chemistry of living organisms
CYTOLOGY - Formation, structure and functions of cells
PATHOLOGY - Manifestations, causes and processes of disease
GENETICS - Hereditary transmission of characteristics
MOLECULAR BIOLOGY -
HISTOLOGY -

There is a comprehensive listing of the major areas of study in biology in H.R. MALINOWSKI et al. Science and engineering literature, 2nd ed. (Littleton, Libraries Unlimited, 1976), p. 158.

2.1.3 How biology draws on other sciences

Modern biology draws extensively upon other areas of the sciences, for example on

PHYSICS	- for methodology and techniques, e.g. microscopy, molecular biology
CHEMISTRY	- chemical properties of living organisms
BEHAVIORAL SCIENCES	- social and psychological aspects of living organisms' behaviour
EARTH SCIENCES	- fossil remains
STATISTICS	- e.g. in population biology, ecology
COMPUTER SCIENCE	- techniques of investigation and analysis.

The biologist may therefore require access to the information resources of a wide range of disciplines.

2.1.4 Pure and applied biology

The information generated by researchers in pure biology is put to use in a very wide range of applied areas, for example

AGRICULTURE
FOOD TECHNOLOGY
ENVIRONMENTAL PROTECTION
'AGRIBUSINESS'
RESOURCES PLANNING AND CONSERVATION
DEFENCE (Biological warfare)
NUTRITION
MEDICINE
VETERINARY SCIENCE
FISH FARMING AND MARINE SCIENCE

2.2 Information resources used by biologists

2.2.1 Print information resources

A previous segment of this course looked at the way scientists in general use information. In broad terms, we can assume that the generalizations made there apply to biologists.

Generally speaking, the literature of biology probably goes out of date less rapidly than that of chemistry and physics. This applies especially to basic work on taxonomy and classification of living organisms: it is much less true of

some rapidly developing interdisciplinary areas like molecular biology or sociobiology.

Biologists appear to use monographs more than do physicists and chemists. One study found nearly 20% of citations in biology were to monographs, compared to an average of 10% for the sciences generally.[1]

Technical reports are not very significant for pure biologists, but they are important in the areas of applied biology most closely connected with national economic policies and planning, for instance agribusiness, resources development.

Biology journals seem to be less highly specialized than those of chemistry. This means that a biologist may find relevant information in a wider range of journals than a chemist.[2]

A recent report from the British Library's Biological Information Review Committee emphasized that most studies of the use of biological information have concentrated on academic biologists. We know very little about how biologists in industry use information: they may differ considerably from academics.[3]

2.2.2 Other sources of biological information

Biologists obtain much of their information through work with, and observation of, the living organisms they study. Access to collections of these organisms is therefore very important. They may include

ZOOS
HERBARIA
BOTANICAL GARDENS
AGRICULTURAL RESEARCH ESTABLISHMENTS
VETERINARY RESEARCH ESTABLISHMENTS
PLANT NURSERIES
FISHERY RESEARCH ESTABLISHMENTS
NATIONAL PARKS
NATURE RESERVES
AQUARIA
ABATTOIRS

---

1 A.J. Meadows. Communication in science. London, Butterworths, 1974, p.89.

2 ibid., p.24.

3 T.D. Crane. Final report of the Biological Information Review Committee. London, British Library, 1978. (BLRCD rept. no. 5438.)

A NEW ERA STARTS FOR THE BOTANIC GARDENS

"These gardens", said the director of Sydney's Royal Botanic Gardens, Dr. Lawrie Johnson, "have languished for a long time. They didn't do very much, except in the scientific sphere.

Now all the botanic gardens in Australia are waking up."

In Sydney the gardens were on the verge of a new era, he said. The public would be involved to a much greater extent, although the various plans would take some years to develop.

One plan for the future was to have an area where people could do their own identification of plants, under supervision. Dr. Johnson estimates that it now costs more than $5 of taxpayers' money every time a scientist has to drop work and do the research to identify a plant when requested by a member of the public.

This ready reference area for the public will not eventuate until about 1982, after the new herbarium is built....

...the gardens at last have defined objectives. Maintaining and preserving the trust lands, the collections of living and preserved plant life, the scientific side of the gardens will continue.

Educational value

"The difference from the past is that at last there is a recognition of their educational value and the need to go out to the public....

...Why? Because we have knowledge that other people don't have and we should be sharing it and making it available. That's the basic reason.

A botanic garden is not a park. It may function in certain ways as a park, but its main task is the increase and dissemination of knowledge and the preservation of material of scientific and horticultural value.

...When the new herbarium is complete, which should be late in 1981, the old herbarium, which we are using now, will have its ground floor converted into a visitors' centre with displays, lectures and hopefully a bookshop.

But the stress will be on the living plants. The gardens are not a museum of static objects and display rooms, but a place where people can get out among the living plants. And we hope that in time we may be able to organise excursions into the bush as well."

One of the first steps in involving the public more in the activities of the gardens has been the appointment of an extension and public relations officer, Mr. Edwin Wilson. His job is to organise programs, tours, displays and exhibits, and he will also be concerned in replanning and redeveloping the gardens along more thematic lines.

Dr. Johnson hopes the new projects will cover a wide range of interests from those of children or the casual visitor to those of people who have a serious interest in biology or horticulture as hobies.

About a million preserved plant specimens from all over the world are kept in the gardens' herbarium to be used for study, research and reference. This is the scientific heart of the gardens. Properly-documented preserved material is essential to its role. It can be used for research which was not even imagined at the time it was collected.

Dr. Johnson's office contains a dried specimen of Banksia ericifolia which was collected by Banks when he can here in 1770 with Captain Cook. Framed and protected by glass, it is hung where the light from the windows does not fall on it, to help preserve it. But a leaf taken from that specimen, collected 210 years ago, could still be broken up and dissected; the structure, the cells are still there, a source for future research if necessary....

Historical importance

The herbarium specimens also have historical importance when the source has been documented properly. They could reveal, for instance, what wildflowers grew in Rose Bay at a given period of our history....

The middle section of the gardens, the oldest historic part, already has a section devoted to economic plants - those used for fibres, food, stock feed, drugs, perfumes and so on. During the next few years the middle section will be converted into a number of display beds under the general title of Plants, Evolution and Man, Dr. Johnson said.

"We hope to convey by these displays, with associated literature and talks, the way in which the plant world fits into the total world in which man and they have evolved, the way plants have adapted to the conditions under which they live, and to the animals, insects and other species with which they interact.

We also hope to have displays of plants showing their use by man in various cultures - how the Australian Aborigines used them, for example. Obviously we could only do this in a very small way. You could have a whole botanic garden devoted to one culture and still not exhaust it, so we'll just be nibbling.

I want a range of approaches, from the very low-key one where people can wander around and enjoy themselves absorbing a little information, through to intensive courses for those who want to study something in depth."

Dr. Johnson also hopes to use volunteers to help in such things as research recording, perhaps propagation in some cases, and as guides, where it accords with union rules.

He also hopes to have a rose garden one day showing the history and development of roses from the early species to modern cultivars....

(Sydney Morning Herald, 11 November, 1980)

2.3.1 Taxonomy

Of all the sciences, biology is the one which places the greatest emphasis on classifying and ordering the phenomena it deals with. It is estimated that more than one million species of animals, and half a million species of plants have already been described and classified, and that there may be as many as ten million living species still to be classified.[1]

TAXONOMY is *the classification of living organisms according to a hierarchical system which best reflects their similarities and differences*. It is important to understand the rudiments of taxonomy, because many information resources in biology are arranged according to taxonomic principles.

The most important categories used in the classification of animals are

KINGDOM
PHYLUM
CLASS
ORDER
FAMILY
GENUS
SPECIES

There are also auxiliary categories, such as superclass, subclass, which are used in groups which have a very large number of species. (For example, insects, with over 750,000 named species.[1])

An example of basic taxonomic classification is:

	HOUSEFLY
KINGDOM	Animalia
PHYLUM	Arthropoda
CLASS	Insecta
ORDER	Diptera
FAMILY	Muscidae
GENUS	Musca
SPECIES	domestica

There is not universal agreement about the classification of plants, and many different groupings will be encountered. Traditionally the plant kingdom was divided into

THALLOPHYTA (Algae and fungi)
BRYOPHYTA (Liverworts, hornworts and mosses)
PTERIDOPHYTA (Spore-bearing plants)
SPERMATOPHYTA (Seed-bearing plants).

LINNAEAN SYSTEM OF CLASSIFICATION: King Peter came over from Germany seeking fortune (kingdom, phylum, class, order, family, genus, species, form).

BEST COPY AVAILABLE

[1] Encyclopedia Americana. Vol.26, p.324.

This division is no longer regarded as adequate.

An example of a fairly widely accepted modern scheme is

'NON-VASCULAR PLANTS - the lower and intermediate plants

THALLOPHYTA - the simple plants

ALGAE - thallophytes with chlorophyll
FUNGI - thallophytes without chlorophyll

BRYOPHYTA - the intermediate plants

HEPATICAE - liverworts and hornworts
MUSCI - mosses

VASCULAR PLANTS - the higher plants

SPORE BEARERS

PSILOPSIDA - fossil *Psilophytales* and living *Psilotales*
LYCOPSIDA - lycopods
SPHENOPSIDA - scouring rushes and relatives
FILICOPSIDA - ferns

SEED PLANTS

CYCADOPSIDA - seed-ferns, cycads, and cycadeoids
CONIFEROPSIDA - *Ginkgoales, Cordaitales, Coniferales,* and *Taxales*
GENTOPSIDA - joint-firs and relatives
ANGIOSPERMOPSIDA - flowering plants'[1]

2.3.2 Nomenclature

In modern biology, it is usual to refer to a living organism by a two-word Latin name comprising the genus and species name. This is known as *binomial nomenclature*. The scientific name is always given in Latin, and is always printed in italics. The genus name is capitalized, the species name is not. For example

Quercus alba	-	white oak
Quercus rubra	-	red oak
Felis leo	-	lion
Musca domestica	-	housefly.

To ensure standardization, new biological species must be named according to the rules established by recognized international authorities. These will be found in

---

[1] P. Gray. The encyclopedia of the biological sciences. 2nd ed. New York, Van Nostrand Reinhold, 1970, p.733.

International code of botanical nomenclature. Utrecht, Oosthoek, 1972.

International code of zoological nomenclature. London, International Commission on Zoological Nomenclature, 1961.

For a short account of taxonomy, see

Encyclopedia Americana. Vol. 26, Taxonomy and Vol. 22, Plants and plant science - classification.

McGraw-Hill encyclopedia of science and technology. Vol. 13, Taxonomic categories and vol. 10, Plant kingdom.

Grzimek, B. Animal life encyclopedia. New York, Van Nostrand, 1974. One page outline follows the 'Systematic Classification' at end of each volume.

2.4 Where are biologists found?

2.4.1 Research

Research in biology is carried out largely in universities, in government and private research establishments, and in government departments.

Some Australian examples are

CSIRO Institute of Animal and Food Sciences

Divisions include

- Human nutrition
- Molecular and cellular biology
- Wheat research

CSIRO Institute of Biological Resources

Divisions include

- Forest research
- Fisheries and oceanography
- Irrigation research
- Wildlife research

NSW Department of Agriculture

Divisions include

- Animal production
- Plant industry
- Research services
- Biological and Chemical Research Institute

Soil Conservation Service of NSW

State Pollution Control Commission (NSW)

Ecological Society of Australia

Objects include 'to promote the scientific study of plants and animals in relation to their environment'.

Genetics Society of Australia

Australian National University. Research School of Biological Sciences

University of N.S.W. School of Wool and Pastoral Sciences

2.4.2 Application and dissemination of research results

Biologists are employed in an enormous range of organizations which utilize the results of biological research, or which repackage and disseminate biological information.

Examples include

CSIRO - Advice and assistance to government, industry, farmers, horticulturalists etc.

Primary industry - Farming, forestry, horticulture, fisheries etc.

Herbaria, botanical gardens, zoos, etc. - Disseminate information to professional biologists and interested amateurs, students, etc.

Education - Teaching of biology at primary and secondary school, tertiary, further and vocational education, hobby and amateur studies.

Secondary industry - Food processing, pet foods, agricultural and garden supplies etc.

Government departments - Advice and assistance to primary and secondary industry, conservation, resources management etc.

2.4.3 The Amateur biologist

In an earlier segment of this course, we discussed the distinction between 'professional' and 'amateur' interest in a subject, and suggested that this distinction generally corresponds with a division of the information resources of that subject into 'specialist' and 'popular'.

Amateur interest in biology is perhaps more extensive than in any other science. There is a correspondingly large range of biology information resources aimed at the popular market, ranging from gardening magazines to expensive coffee table books on animals or wild flowers. Examples of hobby and amateur interest in biology include

Nutrition and diet
Health foods
Gardening
Bushwalking
Pet care
Environmental issues
Conservation

Examples of organizations which produce or disseminate information for amateurs include

CSIRO - e.g. informative leaflets on nutrition
National Parks and Wildlife Service
Zoos, botanical gardens
Nurseries and garden suppliers, e.g. Yates, Swains
Environmental action groups and conservationists, e.g. Friends of the Earth, Greenpeace

Hobby groups, e.g. dog and cat societies, bushwalking clubs

Animal protection groups, e.g. R.S.P.C.A., Animal Liberation

Much repackaging and dissemination of biological information at the popular level is done by the mass media. For example, on the radio, Alan Seale's Gardening talkback, Talkback vet (both on 2BL) and 2FC's Country hour. The ABC's Science show deals with biological information at a rather more theoretical level. On television, documentaries on the plant and animal kingdoms are perennially popular, for example In the wild with Harry Butler, Our world with Ita Buttrose, and the recent B.B.C. import Life on earth.

Amateurs as sources of biological data

The collection of biological data is very costly and time consuming. In Australia there are huge gaps in the data available, for example on flora and fauna and marine life. The involvement of amateurs in collecting data is thus necessary, as well as being an enjoyable hobby. The data may not be of the highest scientific standard - but arguably even suspect data is better than none.

In 1980 and 1981 the Wild Life Preservation Society of Australia conducted a national urban birdwatch. People were asked to spend one hour recording all the birds they saw in their gardens. Birdwatches provide information on the numbers and location of bird species. If conducted over several years they indicate trends, and give warning of species which may be endangered. They also encourage people to be interested in birds and their survival.

Reference: V. Serventy. "The second annual urban birdwatch" Bulletin, 20 January, 1981: 23-4.

3. INFORMATION RESOURCES IN BIOLOGY

3.1 Introduction to the subject and its information resources

R.T. Bottle and H.V. Wyatt. The use of biological literature. 2nd ed. Hamden, Archon Books, 1971.
First part describes types of resourde, e.g. patents, translations. Second part arranged according to specific divisions of biology.
016.574 BOT 1

R.C. Smith and W.M. Reid. Guide to the literature of the life sciences. 8th ed. Minneapolis, Burgess, 1972.
Primarily aimed at teaching library research methods to student biologists.
016.574 SMIT

T.G. Kirk. Library research guide to biology: illustrated search strategy and sources. Ann Arbor, Pierian P., 1978.
Primarily for tertiary biology students.

3.2 Overviews, brief factual information

P. Gray. The encyclopedia of the biological sciences. 2nd ed. New York, Van Nostrand, 1970.
'The only comprehensive, one volume biological encyclopedia in the world today, recommended for its authority and reliability' (Malinowski).
R574.03 GRAY 1970

Grzimek's animal life encyclopedia. New York, Van Nostrand Reinhold, 1972-5. 13 vols.
A major animal encyclopedia, arranged according to taxonomic principles.
R591 GRZ 1

There is also a very large number of encyclopedias on specific subjects, often aimed at the layman or beginning student. Representative examples are listed in C.-C. Cheng. Scientific and technical information resources. (Cambridge, M.I.T. Press, 1977), pp. 51-4. See also the guides to the literature listed in Section 3.1.

M. Abercrombie et al. A dictionary of biology. 6th ed. Harmondsworth, Penguin, 1973.
For the layperson and beginning student.
R574.03 ABE 1

I.F. and W.D. Henderson. A dictionary of biological terms ... 8th ed. London, Longman, 1963.
R574.03 HEND 1963

Further examples of biological dictionaries, general and specialized, will be found in guides to the literature.

3.3 Biological data

Like other scientists, biologists have a great need for data relating to the phenomena they study. In the case of biology, this data includes taxonomic classification of living organisms, data relating to their physiology and biochemistry, and so on. However, since biological data are derived from living specimens, they are frequently not exact in the sense that physical and chemical data are. The weight or life expectancy of a particular species, for example, must be expressed as an average, or within specified tolerances. Thus the nature of the subject matter gives a particular character to biological data.

One of the most comprehensive biology data books is

Biology data book. 2nd ed. Federation of American Societies for Experimental Biology, 1972-4. 3 vols.	R574.0202 BIOL 1-3

An important source of biochemical data is

Handbook of biochemistry and molecular biology. 3rd ed. Cleveland, Chemical Rubber Company, 1976. 8 vols. plus index.	R574.1920212 HAND

For an illuminating account of how biological data is obtained, and vetted, for handbooks of this kind, see P.L. Altman. "Collection, analysis and publication of biological data." In Communication of scientific information; ed. by S.B. Day. Basel, Karger, 1975, pp. 140-148.

Another type of handbook is the aid to identifying birds, animals, plants etc. Those designed to be portable are often called field guides. Examples are

N.W. Cayley. What bird is that? Revised ed. London, Angus and Robertson, 1975.	598.2994 C 1
T. Harris. Wild flowers of Australia. 8th ed. London, Angus and Robertson, 1979.	582.130994 HARR
B.R. Wilson and K. Gillett. A field guide to Australian shells. Sydney, Reed, 1979.	594.320994 WILS

Floras are guides to the taxonomy and distribution of plants in a particular area, for example

N.C.W. Beadie et al. Flora of the Sydney region. Sydney, Reed, 1972.	581.9944 READ

Another type of handbook or data book is the 'how-to-do-it' book, for example

Yates garden guide for Australian gardeners. Sydney, Collins, 1979.

Biological data can also be obtained from computer-based numerical or factual data bases. Such bases are only just beginning to be developed in Australia: they are not widely known, and access to them is often restricted.

Example of a factual data base - *1. Australian Biotaxonomic Information System*

- *Contains records of specimens or field observations of flora and fauna.*
- *Coordinated by Federal Government Bureau of Flora and Fauna, which enforces standards for information exchange.*
- *Cooperative network of local data bases round Australia. Organizations involved so far include*

  Queensland Herbarium
  Australian Museum
  Royal Australian Ornithologists' Union
  National Parks and Wildlife Service, Hobart
  Northern Territory Herbarium
  Museum of Western Australia.

Aims:

(i) *Assist institutions with record management (e.g. Australian Museum has 14,000 mammals, 100,000 species of birds and doesn't know how many insects).*

(ii) *Provide multiple access to records and specimens (e.g. by genus/species, where found, institution, discoverer, etc.), and hence*

(iii) *Facilitate access to information.*

(iv) *Develop a national data base.*

Example of a factual data base - *2. Australian Feed Information System*

- *Operated by Australian Feeds Information Centre, Blacktown - a member of International Feeds Information Centre*
- *Contains data on*

  Animal requirements for nutrients
  Chemical composition, nutritive value, etc. of feeds
  Efficiency with which animals can use specific nutrients
  Feedstuff prices

Aims:

(i) *Help the livestock industries by improving access to information*

(ii) *Combine and manipulate data to work out most cost-effective feeding programs.*

3.4 Finding journal articles, reports, conference papers, books, etc. on a specific topic

Biology digest. Medford, N.J., Plexus, 1974- . R574.016 BIOL
Abstracts 300 periodicals in the life sciences for secondary school and undergraduate students and teachers.

The most important general abstracting service in biology is

Biological abstracts. Philadelphia, Biosciences Information Service, 1926+ . R016.57 BIO 1
Abstracts of articles in about 8,000 serials, as well as monographs, reports, etc. 5 indexes - Author, Subject, Taxonomic, Genus-species, Concept.

Biological abstracts is supplemented by

Biological abstracts: RRM (Reports, reviews, meetings). Philadelphia, Biosciences Information Service, 1967+ .
Covers the 'irregular' literature not covered in Biological abstracts. Until 1980 called Bioresearch index.

A useful guide to the use of Biological abstracts is

M. Campbell. The use of Biological Abstracts and Bioresearch Index. Nathan, Griffith University Library, 1977. 016.57 BIOL Copies also in Lab.
It should be used with caution, however, since it is out of date in places.

There is a very large number of smaller, more specialized abstracting and indexing services in biology: nearly 300 have been identified in the English language alone.[1] Examples will be found in guides to the literature.

Many of the printed indexing and abstracting services in biology can also be searched by computer. For example

BIOSIS Previews. Available through Dialog, Orbit. Data base includes the publications abstracted in both Biological abstracts and Biological abstracts: RRM.

AGRIS - Agriculture Information Service. Run by UNESCO in Vienna, and available in Australia through CSIRONET.

SWRA - Selected Water Resources Abstracts. An international service, available through CSIRONET.

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[1] T.D. Crane. Final report ... p.6.

ASWIS - Australian Sheep and Wool Information Service. Available through CSIRONET.

ENVIROLINE - Environment Abstracts. Available through Dialog, Orbit, etc.

FSTA - Food Science and Technology Abstracts. Available through Dialog, Orbit, etc.

3.5 Keeping up-to-date

Two sections of Current contents are especially useful to biologists. They are

Current contents: life sciences	Samples in lab.
Current contents: agriculture, biology and environmental sciences	

Current awareness services can also be obtained from computer-based information retrieval systems. They may be tailored to an individual profile. Alternatively, and more cheaply, many of these systems offer broadly based current awareness bulletins relevant to a larger number of people. Examples of monthly current awareness bulletins available from the Australian National Library are

Blowflies

Fish diseases

Marsupial biology

Soil conservation

Wheat biology

4. STUDY QUESTIONS AND EXERCISES

1. (a) Give a complete taxonomic classification for the Rufous rat kangaroo. Indicate the category to which each Latin word belongs, as in the housefly example above.

   What is the scientific name of the rufous rat kangaroo using the binomial nomenclature?

   When was this species first named, and by whom?

   (b) Give a complete taxonomic classification for the lion. Indicate the category to which each Latin word belongs, as in the housefly example above.

2. Four of the subdivisions of biology named in Section 2.1.2 are without definitions. Fill in definitions for two (one from each group).

3. (a) What is the scientific name of the waratah? What species of waratah grow in the Sydney area? What family does the waratah belong to? Name two other members of the family.

(b) What is the generic or scientific name for the koala? To what family does it belong?

4. (a) What is the chemical composition of the sex attractant pheromone produced by bees?

(b) Histidine is a naturally occurring amino acid. Find its chemical formula, melting point and where you could obtain detailed information on its isolation and purification. Where is it obtained from?

(c) What are the comparative weights of Russians and Caucasian Americans at birth, four years and seventeen years?

5. (a) An article published in 1977 reported that *Macropus parma*, previously thought to be extinct in New South Wales, has been found here alive and well. Use Biological abstracts vol.64 to trace the article. (Care - which index will be appropriate?) What is the common name of *Macropus parma*, and where exactly in New South Wales is it found?

5. (b) Use Biological abstracts vol. 62 to locate an article on *Posidonia australia* in Botany Bay. What is it, and is it increasing?

6. Case Study: The use of biological information by a residents' action group

The Little Salt Pan Basin Preservation Group was established in 1972 to fight a proposal to turn an area of swampy, neglected bushland on the shores of the Georges River into a garbage tip. The Group was successful, mainly because it had good access to information, and used this information constructively both to point out the drawbacks of the proposal and to suggest alternative uses for the bushland area. Among the topics upon which the Group prepared reports were:

- Overseas methods of garbage disposal
- Vermin in garbage tips
- Flora and fauna of the Little Salt Pan Basin area
- Likely effects of the proposal on flora and fauna
- Alternative sites for the tip
- Effect of the proposal on property values.

What other biological information could the Group have obtained and used? List possible sources for the biological information the Group used or could have used. What problems might be encountered in obtaining and using such information?

Reference

POWIS, J. "Ecology action by the textbook: how to save Little Salt Pan Creek". National Times, Jan.29 - Feb.3, 1973, p.8.

VIII. MEDICINE

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1. OBJECTIVES

When you have completed this segment, you should be able to answer such questions as

i. What is medicine, and what are some of its traditional and more recent subdisciplines?

ii. What kinds of people use medical information resources, and for what purposes?

iii. What are some of the major characteristics of information resources commonly used by people with an interest in medical information?

iv. What are some of the important factors to be considered in building a collection of medical information resources? How are these factors affected by the different characteristics and needs of different types of users?

v. What are the important considerations in evaluating medical information and in answering medical enquiries?

You should also have acquired certain skills, especially

i. Select and use appropriate information resources to answer specific questions in medicine.

ii. Use Index medicus effectively.

iii. Use resources containing information on drugs effectively.

2. MEDICINE AND THE HEALTH SCIENCES

2.1 Medicine and its branches

Medicine is

> *that branch of science which deals with the diagnosis, treatment and prevention of disease in human beings.*

Traditionally, medicine has been primarily concerned with people who are sick. However, modern medicine is increasingly concerned with the promotion and maintenance of good health, as well as with curing or alleviating disease.

Medicine can be divided into the basic medical sciences and clinical specialties. The *basic sciences* provide the theoretical and practical knowledge upon which the practice of medicine is based. For example

ANATOMY
PHYSIOLOGY
BIOCHEMISTRY
MICROBIOLOGY
PHARMACOLOGY

Major examples of traditional *clinical specialties* are

SURGERY
INTERNAL MEDICINE
PSYCHIATRY
OBSTETRICS AND GYNAECOLOGY
PAEDIATRICS

Like all the sciences, medical practice and research are becoming increasingly specialized. Examples of more specialized clinical specialties are

TRANSPLANTATION
MICROSURGERY
OTORHINOLARYNGOLOGY
RHEUMATOLOGY
CARDIOLOGY

There is also a trend for clinical specialties to become more interdisciplinary, and for the primary focus of attention to move from the disease to the patient and his/her total situation. These trends are evident in the emergence of new specialties such as

COMMUNITY MEDICINE
ABORIGINAL HEALTH CARE
SPACE MEDICINE
SPORTS MEDICINE
INDUSTRIAL MEDICINE

Many of the newer medical specialties demonstrate an increasing awareness of the social responsibilities of medical professionals.

Mid-way between the basic medical sciences and clinical specialties are various *'tool sciences'* used by medical practitioners and researchers. The rapid growth and change in medical 'tool sciences' shows how much modern medicine is influenced by technological advances. Some examples are

COMPUTER DIAGNOSIS
HAEMATOLOGY
PATHOLOGY
BIOMEDICAL ENGINEERING

There is a useful list of medical specialities in H.R. Malinowsky et al. Science and engineering literature: a guide to reference sources. 2nd ed. (Littleton, Libraries Unlimited, 1976), pp. 208-9.

Medicine once was - perhaps still is - one of the most highly respected and prestigious professions. In recent years, however, there has been increased questioning of the medical profession and its activities.(1) On the one hand this has led to a proliferation of 'fringe' or alternative medical specialties, for example

OSTEOPATHY
NATUROPATHY
ACUPUNCTURE
CHIROPRACTICE
ORTHOMOLECULAR MEDICINE

Disillusionment with the medical profession has also led to people seeking more information about, and control over, their own health and treatment. This has resulted in an increased demand for medical information in forms appropriate for lay-people.

2.2 Medicine and the health sciences

Medicine is one of a group of subjects often collectively called the health sciences. Among the others are

NURSING
PHYSIOTHERAPY
OPTOMETRY
OCCUPATIONAL THERAPY
SOCIAL WORK AND COUNSELLING
DENTISTRY

---

(1) Ivan Illich. Medical nemesis: the expropriation of health. New York, Bantam, 1977. Ivan Illich, et al. Disabling professions. London, M. Boyars, 1977.
Ian Maddocks. "Medical monopoly: a game for chosen players". New Doctor, 10, October 1978: 34-6.

Increasingly health care delivery is seen as a team effort involving a number of health care professionals who have different, and complementary, skills. Increasingly, too, health care is seen to involve counselling and behavioural sciences, as well as traditional medical skills. These changes mean that medical practitioners and researchers need access to information from a wide range of disciplines. They also mean that there is a large number of people working in the health sciences who are not trained as doctors, but who need access to medical information.

INTEGRATED, COOPERATIVE HEALTH CARE DELIVERY AND MEDICAL INFORMATION - AN EXAMPLE

REGIONAL HEALTH CENTRES - *funded by N.S.W. Health Commission*

Under one roof, individuals and families can obtain

- *Selected medical treatment, e.g. children's dentistry, chiropody*
- *Counselling and information on drug and alcohol problems*
- *Psychiatric counselling*
- *Counselling on marriage and relationship problems*
- *Information and advice about effective parenting*
- *Interpreter services*
- *Information and advice on contraception*
- *Referral to other sources of information or treatment*
- *Other services and information, depending on demand.*

Health care professionals at the centres receive information from

- *Their own professional information networks*
- *Health Commission, including its main and regional libraries*
- *Their colleagues in other professions within the centre*
- *Their clients.*

3. USERS AND CONSUMERS OF MEDICAL INFORMATION

3.1 Doctors

Some doctors operate in private practice, singly or in small groups. Others are attached to institutions, such as hospitals, research establishments, universities and government departments. An Australian survey has suggested that the first group is disadvantaged in its access to information, whereas doctors attached to institutions tend to belong to an information elite.(2)

3.1.1 Doctors attached to institutions

Many of these are engaged in teaching and research, as well as, or instead of, being practicing doctors. Their information seeking and use tend to be like those of academic scientists. In comparison with some academic scientists, doctors rely heavily on the communication of information through the 'conventional' literature (i.e. journals and monographs). Report literature is not generally an important source of information. Doctors are relatively highly organized and cohesive as a professional group. Perhaps this is why they seem to make quite frequent use of conferences and meetings as a means of communicating information.

The medical fraternity was one of the first groups to receive widespread exposure to computer-based information retrieval services. MEDLARS (Medical Literature Analysis and Retrieval System) has been available in Australia since 1969, and its on-line equivalent, MEDLINE, since 1976.(3) Not surprisingly, doctors in universities, large hospitals and research establishments are more likely to be aware of, and use, such services.(4) Doctors in such institutions now have access also to non-bibliographic data bases (see page 221).

3.1.2 Doctors not attached to large institutions

The most common information needs of doctors in single or group practice are (a) information to assist in the diagnosis and treatment of a particular case, and (b) the need to keep up-to-date with changes in the field.

Many doctors obtain much of their information on drugs from drug companies' sales representatives, and from the

---

(2) C. Maguire. "Drug information needs of the Australian medical profession: some insights from a survey." Lasie, 6, 1975-6: 15-19.

(3) National Library of Australia. Annual reports.

(4) C. Maguire. op. cit.

advertisements in medical journals like the Australian Medical Journal, the Australian Family Physician and Drugs.[5] This method of obtaining information is not as dangerous as it might seem, since drug manufacturers are subject to extensive controls (in Australia through the Australian Drug Evaluation Committee), and the information they disseminate is generally both detailed and responsible.[6] Nevertheless, it is often felt that more needs to be done to improve non-institution-based doctors' awareness of information services, or to make the services more appropriate for them, or both.

MEDLINE has been found to be effective in providing a swift answer to questions relating to diagnosis and treatment of specific cases. The problem is that the typical non-institution based doctor does not have immediate access to a terminal.

For updating doctors' knowledge, the postgraduate medical education committees attached to the various universities provide a variety of short courses and workshops, both in the cities and in country areas. These courses are also sold to individuals in cassette form.

The Doctors Reform Society was established in 1973 with the aims of

- Promoting reforms in the health care delivery system
- Improving communication between doctors, allied health professionals, the public, and governments
- Studying and promoting social and environmental reforms in areas related to medicine.[7]

It offers doctors information (with a non-traditional perspective), through its journal New Doctor, and through seminars.

3.2 Paramedical personnel

As mentioned in Section 2.2, people trained in a variety of subjects other than medicine are involved in health care delivery. They may be attached to institutions, or doctors' practices, as part of the health care team. For example,

- Social welfare workers attached to a hospital
- Community nurses attached to a regional health centre
- Physiotherapists working in a hospital
- Nurses employed by doctors in group practice
- Nurses in hospitals.

---

(5) For a list of major Australian medical journals, see List of journals indexed in Index Medicus, 1980. This includes a listing by country.

(6) R.V. Cuddihy. "Scientific information: philosophy and policies within the pharmaceutical industry". In Communication of scientific information, ed. by S.B. Day (Basel, Karger, 1975), 211-30.

(7) New Doctor, 16, 1980: 23.

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Or they may practice these and other professions independently, or attached to non-medical institutions. Health care teams may also include volunteer workers.

The information use and needs of paramedical personnel are not directly within the scope of this package. However, people who provide medical information services should be aware of them, and should guard against excluding them from such services.(8)

3.3. Lay people

We suggested in Section 2.1 that ordinary people have in recent years become more assertive in criticizing, and seeking to understand and control, what medical professionals do to them. One result of this has been an increased demand for, and supply of, medical information aimed at the non-expert. Such information may emphasize 'alternative' or self-help medicine, or it may simply translate orthodox medical knowledge into lay terms.

Organizations and groups which disseminate such information often have a radical or 'self-help' orientation.(9) For example,

WOMEN'S HEALTH CENTRES
- Leaflets on self-medication
- Classes in, e.g. relaxation, massage, tai-chi
- Pregnancy testing
- Abortion counselling

PALA SOCIETY - Alternatives to psychiatric hospitals

ARAFMI - Information and counselling for the friend of the mentally ill

CHILDBIRTH EDUCATION ASSOCIATION

FAMILY PLANNING ASSOCIATION

MEDICAL CONSUMERS ASSOCIATION - Has published a guide to patients' rights and responsibilities

W.H.O. - We Help Ourselves - drug rehabilitation

WEIGHT WATCHERS

(8) An excellent account of the information needs of one such group will be found in C. Maguire et al. The people you know: an investigation of information transfer among a group of Australian social workers in a hospital agency. Sydney, UNSW School of Librarianship, 1976.

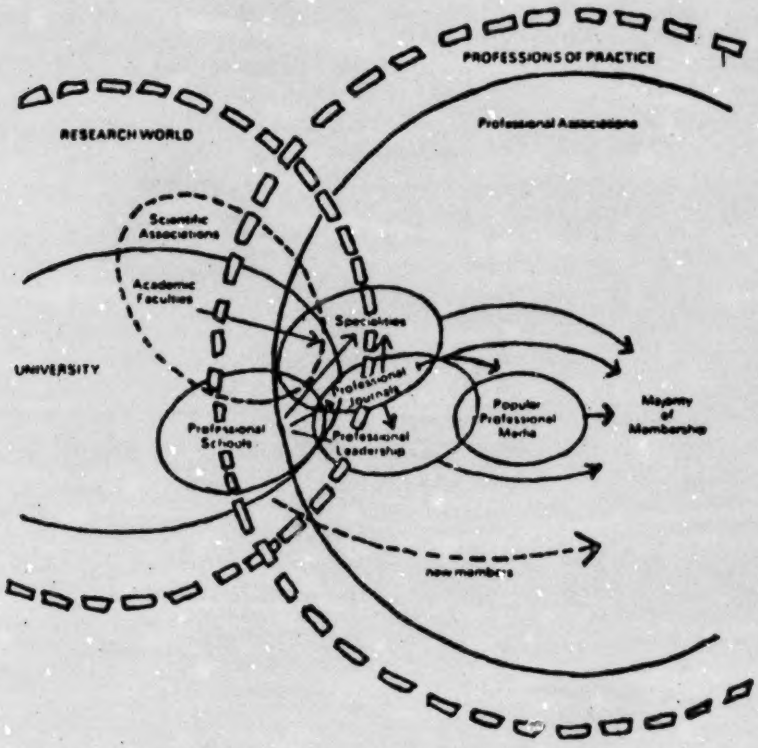
(9) Hence community informtion directories are often a good way of finding out about them. See, for example, the relevant chapters in The New South Wales woman's handbook (Collingwood, Greenhouse, 1980).

4. COMMUNICATION OF MEDICAL INFORMATION

Because of the crucial nature of medical information, it is important that there is a free flow of communication between the research worker, who is usually the first to discover new knowledge relevant to medicine, and the clinical medical practitioner, who is the person most closely responsible for the health of the community. To facilitate this flow are government bodies whose duty it is to monitor research findings and pass on to medical practitioners any which are of immediate importance. In some cases these bodies will communicate directly with the public. The Drug Evaluation Committee of the Australian Department of Health monitors possible side effects of new drugs; the National Health and Medical Research Council advises the government in all matters of health care and in the finding of medical research.

The following model, taken from HAVELOCK, R.G. Planning for innovation through dissemination and utilization of knowledge. Ann Arbor, Mich., Institute for Social Research, University of Michigan, 1969. p. 21, demonstrates the relationship between research and practice. In the medical world, the researchers are located in universities, government departments, hospitals and drug companies. The practitioners in private practice, government departments, hospitals and health centres. Information must be communicated from the practitioner to the consumer and the general public, as well as to each other and to the researcher.

A Theoretical Framework



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It should be kept in mind that this diagram shows a network of medical communication which is relevant only to modern, "Western" medicine. In earlier times medical information was passed on largely by unqualified members of society, the so-called "old wives" whose tales, having fallen into disrepute, are now being restored somewhat to their former positions of influence e.g. herbal remedies. In non-western, "primitive" societies, the dichotomy between the research worker and the practiser of medicine, does not usually exist, being combined in the one person who administers to the whole community. It is interesting to note that, until recent times and still to some degree in primitive societies, the role of the "doctor" has been associated with religious forms or powers. (Some would not agree that this is no longer the case in our own society.)

Not all classes of medical information users have access to all types of medical information, even if they want to. The members of the public will not usually be admitted to the archives room of the medical society, for instance, nor will the government bureaucrat be given information from a patient's hospital record, and nobody will be allowed to view medical histories from a practitioner's consulting rooms. The N.S.W. Privacy Committee is investigating mechanisms of ensuring protection of hospital records from public scrutiny while allowing patients to have access to their own records.

The role of the library, particularly the medical library, is an interesting one. A standard rule in many libraries with regard to medical and legal matters is that librarians will assist in finding information but must desist from interpreting it for the reader. While purporting to be disseminators of information, many medical libraries will, however, as in the case of some hospital libraries refuse admittance to patients/members of the public, or, as in some libraries attached to educational institutions, will admit the public but refuse to give them any assistance in finding the information being sought. Although these practices are widespread, there is some evidence that they are on the decrease. The ethics of the situation, still, however, exercise the consciences of many medical librarians.

5. MEDICAL INFORMATION RESOURCES

5.1 Overview of the subject and its information resources

CHEN, Ching-chih. Health sciences information sources. Cambridge, Mass., M.I.T. Press, 1981. — R610.16 HEAL

MORTON, L.T. How to use a medical library. 6th ed. London, Heinemann, 1979. — 610.7 MORT

An introductory guide for medical students and medical practitioners. Arranged mainly by type of resource (e.g. 'abstracting services', 'audio visual aids').

MORTON, L.T., ed. Use of medical literature. 2nd ed. London, Butterworths, 1977. — 1st ed. at R016.61 MOR 1

MALINOWSKY, H.R. and RICHARDSON, J.M. Science and engineering literature: a guide to reference sources. 3rd ed. Littleton, Libraries Unlimited, 1980. Chapter 10, Bio-medical sciences. 501.6 MAL1 1980

GREENBERG, B. How to find out in psychiatry: a guide to sources of mental health information. New York, Pergamon, 1978. R616.89 GREE

5.2 Journals

Just as there are many levels at which medical information is generated there are many vehicles used for its transmission. Much of the latest medical information is to be found in journals and these can vary a great deal amongst themselves. A research scientist may wish to read of the latest on cytogenetics in a journal such as Annals of human genetics, a medical practitioner may turn to the Medical journal of Australia for an interesting case report, an athlete might gain some advantage from reading Journal of sports medicine, the member of the general public may do likewise from a perusal of Forum, the mother-to-be may find helpful articles in Family Circle.

To reach the widest possible appropriate audience and to enhance their standing among their peers, authors strive to have their articles published in scholarly journals such as The Lancet or, in Australia, the Medical Journal of Australia, which enjoy both high circulation figures and high prestige.

The first problem which arises here is that the reviewing panels of such journals demand articles of a formal, 'scientific' nature with an attendant concern for the publication of first disclosures. There is a widespread feeling that papers with another aim - that of education, or speculation, or case report - must be as formal and as rigidly verifiable as the archival literature proper. The result is that an important function of literature - communication - tends to be neglected. A well known example of this is the attempt by Dr. William McBride to have his paper on the effects of thalidomide on the human foetus published in The Lancet; after it was twice rejected his findings were published as a letter in the journal.

The second problem concerned with publication in periodicals is that the majority of authors are queuing to have their work in the minority of journals. This results in a delay between acceptance of an article and its subsequent publication of perhaps six months. This poses the question of how quickly medical information becomes dated. In some fields such as anatomy, surgery, opthalmology or tropical medicine, an article fifteen years old may still be useful and sought by practitioners. In other areas, such as immunology, biochemistry and preventive medicine, where there is a great deal of research based activity being added to daily, the information quickly becomes dated and delays can impede considerably the flow of information.

5.3 Finding journal articles, conference papers etc.

The most important general medical indexing service is

Index medicus. Washington, National Library of Medicine, 1960- . Monthly + annual cumulations. Indexes about 2600 journals, and a small number of congresses, symposia and multi-authored monographs. Separate Medical reviews section. Supporting publications are — Samples in lab

List of journals indexed in Index medicus. Also listed in each January issue, but this separate publication includes country and subject listings.

Medical Subject Headings (MeSH). Annual. Lists the subject headings used in Index medicus (MeSH), with cross references, classified listing (tree structures), etc. — Samples in lab

Abridged Index Medicus. Monthly. Indexes 118 English language journals - designed for individual practitioners and small libraries. — Samples in lab

The Index medicus data base can also be searched on-line (MEDLINE) or in batch mode (MEDLARS).

A major abstracting service in medicine is

Excerpta medica. Amsterdam, Excerpta medica. Indexes 3500 journals. Published in 43 separate sections, e.g. — Samples in lab

10. Obstetrics and gynaecology
31. Arthritis and rheumatism
35. Occupational health and industrial medicine
37. Drug literature index
38. Adverse reactions titles
40. Drug dependence

Supporting publications are

Excerpta medica user manual. 1979.

List of journals abstracted. 1980.

Guide to the Excerpta medica classification and indexing system. 1978.

Like Index medicus, Excerpta medica is the print version of a base which can also be searched by computer. One reason for the greater popularity of Index medicus and MEDLARS/MEDLINE is that they are considerably less expensive than the Excerpta medica services.

There are many indexing and abstracting services in specialized areas of medicine. There is a very selective listing, by subject, in L.T. Morton. How to use a medical library. 6th ed. (London, Heinemann, 1979), pp. 44-54. For further examples, see other guides to the literature.

5.4 Realia

Much medical information is not, however, in printed form. "Realia", such as anatomical models, skeletons and pathology specimens convey important information, especially to the medical student. Histology slides containing a smear of microbial material allow the same student, or the pathologist, to directly observe the organism and, therefore, recognize it far more easily than with a written description.

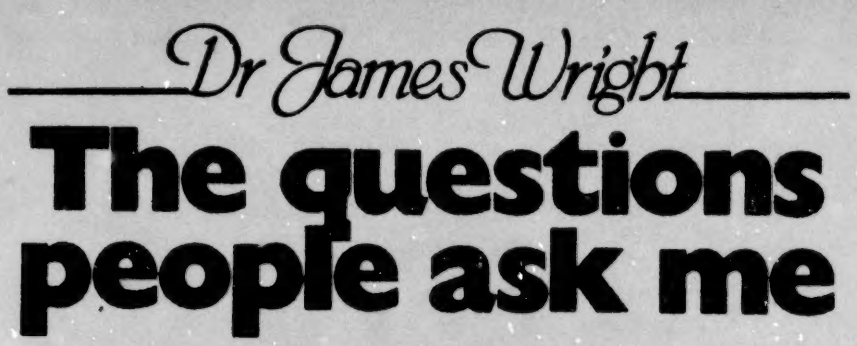
5.5 Graphic Records

There are many graphic aids in medical information. Medical illustration is one of the oldest branches of the profession and was vital before the days of legal dissection and of photography. Recently, x-rays images, videofilm of, for example, a patient's gait, and computer-assisted displays are used extensively.

Public health authorities often use posters to get their message across. Examples of these are the notices in N.S.W. Public Transport Commission vehicles warning of the dangers of venereal diseases or advising parents on the desirability of inoculation for their children. The Life: Be in it campaign is an example of a project which used the electronic media, pictorial art as in posters and printed literature in the form of pamphlets. Pamphlets and leaflets are a common way of transmitting medical information to the general public. Examples of these are the ones distributed by the N.S.W. State Cancer Council instructing women on breast examination or giving advice to sun bathers on which suntan preparation is suitable for their skin types.

5.6 Mass Media

Medical information for lay people is often disseminated via the mass media. For example, advice columns in newspapers (Dr. Wright in the Sun), or in weekly or monthly magazines (Australian Women's Weekly, Readers' Digest); radio programmes (e.g. The body programme on 2BL, The science show on 2FC); TV documentaries (e.g. The body in question).



JAMMED FINGERS

Every now and then one of the children will manage to get some fingers jammed in the car door. It makes a mess of the ends of the fingers and is awfully painful. Is there some simple first aid remedy?

Give the injured fingers a quick rinse in cold water. Add an antiseptic if you have some handy. Wrap firmly with a cotton bandage, and then apply an ice pack.

Keep the fingers elevated. This seems to quickly reduce pain and checks bleeding. Any dirty wound where the skin is broken may need a tetanus up-date, and antibiotics may be needed also from a doctor to prevent subsequent infections.

Often the nails will come adrift — do not pull at them. New ones will grow back after several months. W

The Australian Women's Weekly Medicine Chest Book, Dr Wright's advice for every family which values health and safety, is on sale for $3.98 at your newsagent now.

THE AUSTRALIAN WOMEN'S WEEKLY — JANUARY 21, 1981

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The popular press - a medical information resource.

5.7 Medical Fiction

While lay people seek and use medical information for practical purposes, the world of medicine is also a popular setting for recreational material. For example, novels about doctors and nurses; popular accounts of medical breakthroughs such as test-tube babies; medical biography; TV series such as The young doctors and Hospital. Recreational materials can sometimes be a useful means of disseminating serious information.(10)

5.8 Audiovisual Resources

Audio recordings are important in medicine, "Original" sounds such as heartbeats and pulses enable the student to recognize signs of danger or distress. Cassette recordings

(10) D.J. O'Connell. "'Marcus Welby, M.D.' as medical communication." In Communication of scientific information... pp. 165-173.

of lectures help keep medical practitioners up-to-date with developments in their fields. Cassettes containing medical information are also available such as those by Dr. Lyn Barrow on insomnia, relaxation and his Child Development Series.

Recorded sound cassettes of lectures on topics of current medical interest have been produced by:

University of New South Wales - Postgraduate committee in medical education. Medical cassette service.

These cover topics such as sudden infant death, heart surgery, hypertension, etc. and are intended as a form of continuing education for medical graduates.

5.9 Lists of books and A/V materials

BLAKE, J.B. and ROOS, C., ed. Medical reference works, 1697-1966: a selected bibliography. Chicago, Medical Library Assoc., 1967.
- Suppl. 1, by M.V. Clark
- Suppl. 2, 1969-1972
- Suppl. 3, 1973-1974

R016.61 MEDI
Copies also at R610 MEDI

LIBRARY ASSOCIATION. Books and periodicals for medical libraries in hospitals. 5th ed. London, L.A., 1978.

R610.16 LIBR

FORD, E. Bibliography of Australian medicine, 1790-1900. Sydney, Sydney U.P.,1976.

R016.610994 FOR 1

Bowker's medical books and serials in print. New York, Bowker. Annual. Subject, author and title indexes.

1977 ed. at R016.61 BOW 1

National Library of Medicine. Current catalog. Quarterly. Lists books and serials by name, title, and subject (MeSH).

Samples in lab

National Library of Medicine. Audio-visuals catalog. Quarterly.

5.10 Definitions and brief factual information

General medical dictionaries and handbooks may be aimed at the medical professional, or the lay person, or both. Major examples are

Stedman's medical dictionary: a vocabulary of medicine and its allied sciences, with pronunciations and derivations. 24th ed. Baltimore, Williams and Wilkins, 1981.

R610.3 STED 1976

Black's medical dictionary. 33rd ed. London, A and C Black, 1981.
For practitioner and lay person. Longer articles than Stedman's and Dorland's.
31st ed. at R610.3 BLAC

Dorland's illustrated medical dictionary. 26th ed. Philadelphia, Saunders, 1981.
25th ed. at R610.3 DORL 1974

McGraw-Hill nursing dictionary. New York, McGraw-Hill, 1979.
For nurses and nursing educators. Includes pronunciation.
R610.3 MACG

Merck manual of diagnosis and therapy. Robert Berkow, ed. 13th ed. Rahway, N.J., Merck Sharp and Dohme, 1977.
An extremely useful handbook designed for the practitioner.
R616.057 MERC

WINGATE, P. The Penguin medical encyclopedia. 2nd ed. Harmondsworth, Penguin, 1976.
Mainly for the lay person. Longer articles than in Stedman's or Dorland's.
R610.3 PENG

For further examples of medical dictionaries and handbooks, including ones relating to special areas of medicine, see guides to the literature.

5.11 Do-it-yourself medicine

Most general medical encyclopedias and handbooks are intended for lay and home use. Examples are

R. Spencer. The A-Z of Australian family medicines. Sydney, Butterworths, 1980.
To give lay people information about medicines which have been prescribed for them. Endorsed by the A.M.A.
R615.10994 SPEN

H. McCaughey. Is it poisonous? The complete guide to poisoning prevention and first aid. Sydney, Angus and Robertson, 1976.

Life, love and family health: the encyclopedia of man, woman and child. London, Hamlyn, 1970. 20 vols.
Q610.5 LIF

International family health encyclopedia. Los Angeles, AFE Press, 1971. 22 vols.
R616.003 INTE

Rees, A.M. and Young, B.A. The consumer health information source book. N.Y., Bowker, 1981.
R613.016 CON

5.12 Statistics

Statistical information is important in some branches of medicine, for example, for planners and others concerned with the state of the nation's health, or the health of specific groups. Examples of statistical publications include

WORLD HEALTH ORGANIZATION. World health statistics report. Geneva, W.H.O. Annual.

AUSTRALIAN BUREAU OF STATISTICS. Perinatal deaths, Australia. Annual. (Cat. no. 3304.0).

For details of other medical statistics published by the A.B.S., see its annual catalogue.

HEALTH COMMISSION OF N.S.W. Statistical and financial data, public hospitals. Annual.

5.13 Data on drugs

Information on drugs is extremely important for doctors. They may need to know, for example

- what drug is recommended for a particular disease
- who manufacturers a drug, under what trade name, and in what forms and strengths
- recommended dosages
- contra-indications (circumstances in which a drug should not be given)
- reported adverse reactions and side effects
- chemical composition of a drug

This kind of information is contained in pharmacopoeias and other pharmacological handbooks. For example

MIMS annual. Artarmon, IMS Publishing. Annual + suppls. R615.105 MIMS
Very extensively used by doctors for prescribing information. Incorporates the Australian drug compendium.

The Merck index: an encyclopedia of chemicals and drugs. 9th ed. Rahway, Merck, 1976. R615.103 MER 1
Chemical data on 'the most important chemicals, drugs, pesticides and biologically active substances known.'

Pharmacopoeias, as well as giving chemical and therapeutic information about drugs, lay down standards for their preparation. For example

British pharmacopoeia. London, Pharmaceutical Press, 1980.
The accepted legal standard in Britain and the Commonwealth countries for the drugs described in it. 1980 ed. incorporates considerable changes to conform with European standards.

The extra pharmacopoeia. London, Pharmaceutical Press, 1977.
Contains much additional information not found in B.P. Usually known as Martindale.

Those doctors who have access to Medline often use it to obtain information on the best treatment for specific cases, and on the actions and side effects of drugs. A new development in Australia is the availability of drug data on-line from non-bibliographic data bases (i.e. data bases which contain factual data instead of bibliographic references).

For example, RTECS, available through the MEDLINE network, contains data on the toxic properties of 34,000 chemical substances. The Commonwealth Department of Health's on-line National Drug Information Service will, when complete, contain profiles for all drugs commonly prescribed in Australia. Each profile gives data on the drug in 38 standard format sections (e.g. trade name, pharmacology, use in pregnancy, adverse reactions, dosage, etc.).

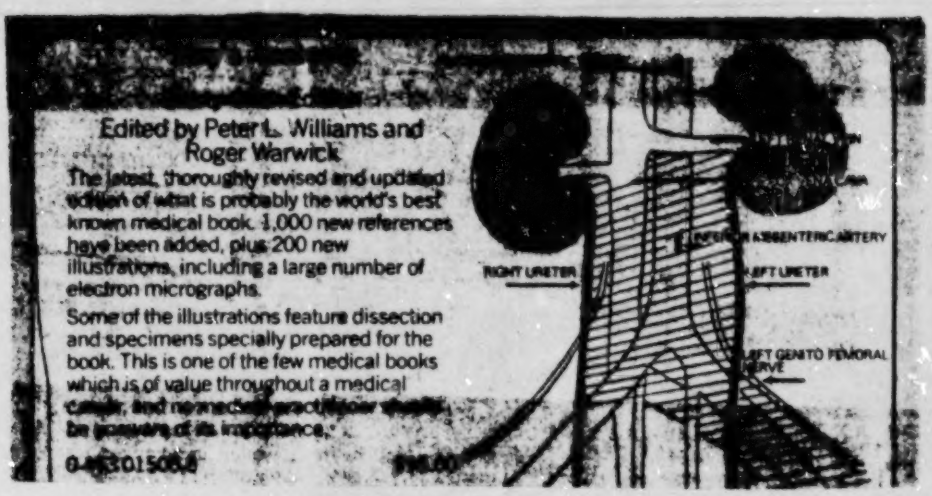
5.14 Information on people and organizations

Medical directory of Australia. Glebe, Australasian Medical Publishing Co., Lists doctors practicing in Australia. Also includes a variety of useful directory type information, e.g. . lists of hospitals . specialist societies and associations . relevant government departments, etc.	R610.5 MEDI
Hospitals and health services yearbook Australia. Prahran, Peter Isaacson. Annual.	R362.1105 HOSP
Medical research index: a guide to world medical research. 5th ed. Harlow, Francis Hodgson, 1979. 2 vols.	4th ed. at R610.72 MEDI 1971
TOWNSEND, H. Where to go when your doctor can't help. Sydney, Medipress, 1979.	R362.10250994 TOWN

Community information directories are also important resources for some types of medical information.

5.15 Standard texts

Medical students make extensive use of standard texts, many of which have run into many editions. For example:


Edited by Peter L. Williams and Roger Warwick
The latest, thoroughly revised and updated edition of what is probably the world's best known medical book. 1,000 new references have been added, plus 200 new illustrations, including a large number of electron micrographs.
Some of the illustrations feature dissection and specimens specially prepared for the book. This is one of the few medical books which is of value throughout a medical career, and no medical practitioner should be ignorant of its importance.
RIGHT URETER
LEFT URETER

Doctors often use 'physician's desk references', for example

KRUPP, M.A. and CHATTON, M.J. Current medical diagnosis and treatment. Lange. Annual.

6. STUDY QUESTIONS AND EXERCISES

1. Answer one of the following questions using Index medicus:

   (a) 'I believe some articles on treating funnel web spider bite were published in 1978 or 1979.' (Use Index medicus to find at least one reference).

   (b) In 1976 someone reported in a medical journal a case of an attempted suicide by spider bite. (Use Index medicus to find the citation).

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(c) Has interferon been used to treat shingles? (Use Index medicus 1978).

(d) What journals would you suggest as likely sources for articles on the health of Aboriginals? (Use Index medicus).

(e) 'There was an editorial on battered wives in one of the American journals in 1977. I can't remember which journal.' (Use Index medicus 1977 to find the complete reference).

2. According to the Australian Bureau of Statistics, the most common causes of death in Australia are *ischaemic heart disease* and *malignant neoplasms*. (Causes of death, Australia. Cat. no. 3303.0).

Use dictionaries, handbooks or encyclopedias to find out what one of these is. The definitions should be exact, but should be comprehensible to you as a lay person.

3. Answer at least one of the following questions, using pharmacological handbooks.

   (a) Is there any drug for the treatment of Paget's disease, available in Australia, which can safely be prescribed in pregnancy?

   (b) My doctor has prescribed Visken. What's wrong with me? Could it be Visken that is giving me stomach pains?

   (c) I've heard that Depo-Provera is a very reliable contraceptive. What is it, and how safe is it?

4. Do you think that a library should answer questions like 3(a) - 3(c)? If you were responsible for reference services what guidelines would you lay down to help staff when they were asked questions like this? Would the guidelines be different in different types of library? Where else could or should people go to obtain such information?

5. Using directories, answer the following questions:

(a) Dr. S.K. Sutherland has done some work on treating funnel web spider bite. Where can I get in touch with him?

(b) Some brief information on the Walter and Eliza Hall Institute of Medical Research.

(c) There's an organization in Sydney which offers advice to women who have had breast surgery. What is it called, and where is it?

6. Why does the advert for Gray's anatomy on p. 222, imply that few standard texts are useful throughout a medical career? What kinds of information resource might be more useful, and why?

7. This winter, let Ventolin (salbutamol) work for you and your patients in the treatment of bronchitis.

Bronchitis and other obstructive lung diseases are known to be accompanied by impaired mucociliary clearance[1]. It has been shown that beta-adrenergic agents can accelerate mucus clearance rates from the entire tracheobronchial tree of normal man, either by direct (aerosol) or indirect (systemic) application[2]. The safe yet powerful bronchodilator effect[3] of Ventolin (salbutamol), together with improvement in mucus clearance from obstructed airways, can offer your bronchitic patient a better time this winter.

Ventolin Syrup: Palatable and does not cause gastric upset. NHS 300ml plus 4 repeats.

Ventolin Inhaler: NHS One aerosol complete plus 2 repeats. For full prescribing information for all forms of Ventolin, refer ADC/Mims Annual. For further information, please contact the Medical Director, Allen & Hanburys, Mountain Highway, Boronia, Victoria, 3155.

Reproduced here is part of a drug manufacturer's advertisement aimed at doctors. What do you think of it as an information resource?

8. Reproduced on the following page is part of A consumers guide to childbirth education (published by Parents Centres Australia). What does it indicate about the attitude of lay people towards the provision of medical information? Do you think that there are lessons here for the providers of medical information services?

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If you are pregnant, or planning to get pregnant soon, you'll want the best in pre-natal preparation for birth and parenthood. You'll also want to know where to find sympathetic medical care and to establish help lines for any problems that may arise after your baby is born.

If you are shopping about for childbirth classes, ask yourself these questions about the classes you have considered:

Are the classes at night so that your partner can learn with you? You'll need the support of a constant companion in labour, and sharing the experience with someone enhances birth for you both. Your partner will need to know exactly what you have been taught to effectively help you.

How many hours of instruction are offered? You'll need at least 20 hours of discussion, practice sessions and instructions to learn everything you'll need to know. Anything less than this will leave you half prepared!

Who will be your teacher? Will it be a health professional who will aim to tell you about the hospital's services rather than explaining your choices? Has your instructor been chosen because of personal experience with prepared childbirth and for their enthusiasm and ability to relate as one parent to another?

Are there other support services available as an adjunct to your classes? What if you miscarry and need to talk to

an understanding counsellor about it? Is there access to information about the various hospitals and doctors and their attitudes and services? Is there 24 hour counselling available after baby is born should you need help with breastfeeding or other worries? Are film nights, birth option discussion nights, and planning a pregnancy nights included in the total scheme of preparation?

Are comprehensive notes provided to give you further background information to the class content? Are these notes free? Are they specially prepared, or free handouts from drug or other commercial interests?

Do you have an opportunity to voice your opinion about the quality of the classes, or to pass on your experiences so that other parents may benefit later?

Once the baby is born, will you be left to find a new source of support for your parenting role? Will this involve you in additional time, hassle or expense?

Finally, are you getting your money's worth? Of course, classes may be free, but they may be inadequate to prepare you fully. If you are paying a fee, does it include your notes, back-up services, membership (of the sponsoring group) and access to ancilliary services? If you are paying more than $40.00 for 20 hours of instruction, you may be paying too much.

BEST COPY AVAILABLE

9. The Molland Regional Library Service (a public library service in rural N.S.W.) is opening a new branch library at Warrangambilla in 1981. The branch is to have a small basic reference collection. Complicated reference questions will be referred to the Central Library at Molland. You have been asked to select suitable materials for the Medicine section of the reference collection at Warrangambilla branch library.

   1. List, and comment briefly upon, the criteria and considerations which would be important in making your choice. (No more than one page.)

   2. List ten resources which you would include, giving a complete bibliographic citation for each.

   3. For each resource listed, comment briefly on why you chose it, and how it fits in with the criteria you established in Section 1.

   4. Indicate how you know about the resource, e.g. personal examination. If you are relying on a review or bibliography, give the citation.

   Notes

   (i) Do not include general information resources (e.g. general encyclopaedias or directories).

   (ii) Include only information resources which you have found out about through a source you regard as reliable, or which you have personally examined.

   (iii) As well as being individually appropriate, the resources should together make up a well-rounded collection which meets all the criteria you listed in Section 1.

IX.

ENGINEERING

Outline of Segment

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1. OBJECTIVES

When you have completed this segment, you should be able to answer and discuss such questions as:

i. What are the characteristics of engineering? What are its branches? What type of work do engineers do?

ii. How do engineers use information? What channels of supply of information do they prefer?

iii. What is the range of engineering information resources available?

iv. What are the characteristics of patents, trade literature and standards?

In addition, you should have acquired certain skills, namely:

i. choose resources suitable for answering enquiries in engineering seeking both factual and bibliographic information.

ii. use Engineering index effectively.

iii. evaluate both the resources used and the information located.

iv. identify problems in building a collection of engineering information resources.

2. ENGINEERING: WHAT IS IT?

We see the results of engineering about us every day - bridges, cars, roads, buildings, telephones - to name but a few. What do all these things have in common? Many attempts have been made to define the term "Engineering", none of which would be acceptable to all engineers. It is useful to examine some of these.

> "The application of science and mathematics by which the properties of matter and the sources of energy in nature are made useful to man in structures, machines, products, systems and processes."
>
> - Webster's

> "The science by which the properties of matter and the sources of power in nature are made useful to humans in structures, machines, and products."
>
> - McGraw-Hill Dictionary of Scientific and Technical Terms

> "Engineering is the profession in which a knowledge of mathematical and natural sciences, gained by study, experience and practice, is applied with judgement to develop ways to utilize economically the materials and forces of nature for the benefit of mankind."
>
> - Engineers' Council for Professional Development

> "Engineering is the profession that puts powers and materials to work for man. Engineers themselves often discover or create new materials and sources of power that serve man. To put power and materials to work, an engineer must know and use principles of science and mathematics."
>
> - World Book Encyclopedia

> "The are of applying science to the optimum conversion of the resources of nature to benefit man."
>
> - Encyclopedia Britannica.

3. THE ENGINEER: HIS TASKS

The tasks an engineer carries out set the parameters of the type of information he requires. As has already been mentioned, the purpose of engineering is to produce a functional piece of equipment. The first stage of this is the design which must then be transformed into some equipment, device or component.

An architect can design a building, and a builder construct it, but each must consult the engineers for its structure and methods to establish the best materials to be used, and their strengths. The construction of the Sydney Opera House is the classic example. The intricate shell configuration of the Opera House was designed by an architect. However, the existing construction techniques and methods were not sufficiently advanced to erect such a structure. Therefore new construction techniques and methods had to be developed. This led to the delay and escalation of costs.

This example illustrates the critical difference between engineering and other scientific disciplines. Namely, an engineer must be able to transform an idea into something which will work, whereas a mathematician can happily dwell on mathematical equations without ever having to apply these equations to practical use. This is not to say that the engineer is totally devoid of any theoretical approaches or understanding to problems. On the contrary, he must understand fully the theoretical problems in order to find a satisfactory solution to the problem.

There are different areas in which engineers work and different tasks associated with these. The three main areas in which the engineer is likely to be involved are:

(1) Research Work

This work involves the development of new technologies to satisfy the needs associated with a new problem not previously encountered. The fundamental laws and principles of science and mathematics must be manipulated and applied to the problems to be solved. An example of this type of activity was the design of the moon landing module. Designing machinery to fly in a vacuum was a totally new concept. This meant the reinvestigation of the laws of aerodynamics applying to a flying object. The engineer working in this area is usually called the Research Engineer and works in a university type institution or government department. To him, the theoretical approaches to the problem are just as important as the practical approaches.

(2) Development Work

This work involves the development of technology to find a new solution to an existing problem. There may be an attempt to replace or improve upon a previous solution. It usually involves the investigation and re-assessment of the existing problem, and a canvassing of possible new approaches. An example of this is the search for alternative fuels for the motor car. Methanol has been mentioned as one of the likely

alternative fuels, because it can be produced from coal. The technologies of coal and extraction of methanol from coal are well established and known. However, the problem is to make these processes acceptably cheap and efficient. The engineer working in this area is usually called the development engineer and he can be found working for large corporations which have a research division. To him practical approaches to the problems are more important than theoretical approaches.

(3) Design Work

This work involves the application of existing devices, equipment or component to a new situation or to the solution of existing problems. Examples of this type of work are:

(i) some one who is building a hi-fi set at home, and

(ii) an engineer who has to modify a piece of equipment bought by his company to the particular specifications and requirements of the company.

The engineer in this area is usually called a design or a working engineer. He doesn't develop technologies; he simply applies the existing technologies. Theoretical approaches to the problem are not important to him at all. He is only interested in "how can I do this to achieve that?" He usually works for a small to medium size company or is the hobbyist or home inventor.

4. INFORMATION USE

4.1 Characteristics of engineering information

As previously explained, most of the activities of engineers relate to the applications of research to the solution of problems. This means that:

(i) because their information requirements are problem-oriented, the information must be selective and frequently synthesized.

(ii) the information required may not be highly sophisticated (preferred information often tells "how" not "why").

(iii) the information may be quite old as well as very recent.

(iv) a picture is worth a thousand words. Charts, tables, graphs or other graphic forms are more efficient in communicating many types of information required by engineers.

The construction of the Sydney Opera House illustrates the information requirements of the engineer. Imagine yourself as the engineer who has just been asked to construct the roof structures of the Opera House. You need information to solve this problem. What information do you need? Some of the considerations are:

1. you need to know whether such a structure has been built before.
2. if so, "how" it was done.
3. the technical drawings of the constuction methods would be more useful than a wordy description of the construction methods.
4. your information might be simple, sophisticated, old or new.
5. if unable to locate this information, your net would sweep wider. You would probably look for more general information and examine different types of construction methods in existence which could be adapted or modified to solve the problem.

Information needs of the engineer are always in response to a problem and subsequent problems. The engineer must resolve the problem in the most efficient and cheapest way.

4.2 Information channels

Where do engineers get their information?

(a) Colleagues

Inter-personal communication is probably the single most important information channel for engineers. For the information required, talking to a colleague who knows the answer is often the most efficient - and certainly the easiest way of obtaining information to resolve a problem.

(b) Organizations

Organizations can also provide a major source by which information is gathered and disseminated in a scattered community. The engineers' professional associations such as Institution of Engineers (Aust.) are especially important in this regard, but others may be:

Individual manufacturers, e.g. B.H.P.
Consulting firms, e.g. Macdonald Wagner & Priddle Pty. Ltd.
Government departments or organizations, e.g. C.S.I.R.O., Division of Soil Mechanics

Organizations arrange conferences and meetings, publish newsletters and journals, and maintain files which all facilitate information transfer.

(c) Printed materials

Engineers use personal files, and their own personal collections of books and other printed materials. As a whole engineers are not good library users. The pattern of library usage tends to relate to the type of engineering activity as discussed earlier.

Research Engineers: This group tends to use the library more heavily than the others. Mainly because research means keeping up-to-date with what others are doing and also theoretical approaches to the problems to be solved are important to research engineers. They tend to use academic libraries or large special libraries which have good research collection.

Development Engineers: This group is usually employed by large companies which have special technical libraries.

Design Engineers: This group on the whole does not make extensive use of library collections. Ideally, they should utilize services provided by the Public Libraries, however they rarely realize the potential of public libraries as an information source. The state libraries are often used by this group.

Consulting Engineers: This group would carry out many of the activities listed above, but do so on behalf of another organization.

5. SPECIFIC TYPES OF INFORMATION RESOURCES AND THEIR USE

The following summarizes what engineering and engineering information is all about.

(1) Engineering applies fundamental laws of science, particularly those of physics and mathematics to the solution of problems. The output is an object or a process serving some useful purpose.

(2) The main task of the engineer is to transform input (an idea, a concept or a design) into output, e.g. a process, a piece of equipment, a component, or a structure.

(3) There are three main types of engineers -

a. Research Engineer
b. Development Engineer
c. Design Engineer

(4) The information needs are selective and problem oriented.

(5) The channels used to transfer information may be people, organizations, or printed materials.

The remainder of this guide concentrates on the printed materials. These printed materials may be encyclopaedias or handbooks, journals, books, trade literature, directories, technical reports, standards or patents.

5.1 Guides to engineering literature

If you know nothing about engineering and its information resources, the best place to start is with a "guide to the literature", such as:

MALINOWSKY, H.R. and RICHARDSON, J.M. Science and engineering literature: a guide to reference resources. 3rd ed. Littleton, Colo., Libraries Unlimited, 1980.	501.6 MAL 1980
MOUNT, E. Guide to basic information sources in engineering. N.Y., John Wiley & Son, 1976.	R607 MOUN
PARSONS, S.A.J. How to find out about engineering. Oxford, Pergamon Press, 1972.	R016.62 PAR 1
Use of engineering literature. Edited by K.W. Mildren. London, Butterworths, 1976.	R620.0016 MILD

These are general guides to all branches of engineering. There are also guides to a specific branch of engineering, such as:

HOUGHTON, B. Mechanical engineering: the sources of information. London, Clive Bingley, 1970.	621.07 HOU

5.2 Quick reference sources

Reference books such as handbooks, manuals, yearbooks, dictionaries, and encyclopaedias usually contain factual information that can be retrieved easily. The engineer frequently keeps a working collection of these books in his office. Many of these synthesize information published elsewhere in journals and books. A large part of the contents of these materials is devoted to engineering data, recording such details as tensile strengths of various materials, circuit design, and properties of all materials likely to be used by engineers.

5.2.1 Encyclopedias

There are few general engineering encyclopedias. Encyclopedias on science and technology are useful and there are many on specific aspects of engineering.

Encyclopedia of computer science. New York, Petrocelli, 1976.	001.6403 ENCY
Encyclopedia of environmental science and engineering. 2 Vols. N.Y., Gordon, Breach, 1976.	R628.5 ENCY 1-2
Engineering encyclopedia. 3rd ed. N.Y., Industrial Press, 1963.	R620.3
GEORGANO, G.N. The complete encyclopedia of motor cars 1885 to the present. 2nd ed. N.Y., Dutton, 1973.	R629.222209 GEOR
How things work: the universal encyclopedia of machines. St. Albans, Herts., Paladin, 1975. (1967). 2 vols.	R600 BIB 1-2
International petroleum encyclopedia. Tulsa, OK. Petroleum Publishing, 1978 (latest edition).	
McGraw-Hill encyclopedia of science and technology, 4th ed. 15 vols., N.Y., McGraw-Hill, 1977.	R503 MACG 21-35

5.2.2 Dictionaries

Engineers use dictionaries:

a. to find precise definitions of terms
b. to locate standardized and accepted terms when writing reports.

Dictionaries t[illegible] may be general or specific.

Chambers dictionary of science and technology. N.Y., Barnes & Noble, 1972.	R603 C 1
McGraw-Hill dictionary of scientific and technical terms. 2nd edition. N.Y., McGraw-Hill Book Company, 1978.	
THRUSH, P.W. ed. A dictionary of mining, mineral and related terms. Washington, D.C., U.S. Dept. of the Interior, Bureau of Mines, 1968.	R622.03 THRU
TURNILL, R. The language of space: a dictionary of astronautics. London, Cassell, 1970.	R629.403 T 1
Van Nostrand's scientific encyclopedia. 5th ed. N.Y., Van Nostrand, 1976.	R503 VANN 1976

5.2.3 Handbooks, Manuals and Yearbooks

In engineering, one author may call his work a handbook, another a yearbook, and yet another a manual, but in fact they probably all contain the same kind of information. Engineers use handbooks, manuals, or yearbooks mainly for reliable, factual information, such as:

a. products available
b. services availab le
c. engineering calculations
d. properties of materials
e. an illustration of a process, a component or a piece of equipment.

They use these mainly to answer simple questions such as:

. what is the tensile strength of concrete?

. how many types of heat pump are there?

Many of them are similar to specific subject encyclopaedias. It is this type of information resource which is used very heavily by the hobbyist. The various manuals for cars are particularly popular.

The concrete yearbook, 1979, 55th edition. London, Cement & Concrete Assoc., 1979.

Engineering materials handbook. ed. by C.M. Mantell, N.Y., McGraw-Hill, 1958. — R620.1 ENG 1

HICKS, T.G. ed. Standard handbook of engineering calculations. N.Y., McGraw-Hill, 1972. — R620.00212 HICK

Highway engineering handbook. Ed. by K.B. Woods, N.Y., McGraw-Hill, 1960. — R625.7 HIGH

Jane's all the world aircraft. ed. by J.W.R. Taylor. London, Jane's Yearbooks. — R629.133025 JAN 1

Jane's fighting ships. London, Jane's Yearbooks. — R623.625 JANE

Kempe's engineer's year-book. London, Morgan, 1894- . — R620.005 KEM 1

Marks' standard handbook for mechanical engineers. ed. by T. Baumeister and others. 8th ed. N.Y., McGraw-Hill, 1978. — R621. STAN

MARKUS, J. Sourcebook of electronic circuits. N.Y., McGraw-Hill, 1968. — 621.3192 MAR 1

MERRITT, F.S., ed. Standard handbook for civil engineers. 2nd ed. N.Y., McGraw-Hill, 1976. — R624 STAN 1976

Reader's Digest do-it-yourself manual. Sydney, Reader's Digest Association, 1965.		Q643.7 R 1
WAIT, D.	Car owner's body repair and maintenance book. Sydney, Ure Smith, 1974.	Q629.287 WAI 1

5.3 Journals

It is a basic principle of scientific investigation in areas like chemistry that a piece of research is not regarded as complete until the results have been written up and published. Journals have been used traditionally for such publication of results. However, with engineers, they often don't want to publish the results of investigations or developments quickly. This could be due to pending patents and industrial secrecy or often because the results of engineering investigations are only applicable to local conditions and environments. Therefore, engineers do not use journals as a communication channel to the same degree as, for example, do chemists. They use journals mainly to find out the latest products or how others have tackled the same problem. Basically there are three types of engineering journal:

(a) Scholarly journal

Primarily aims at the specialist in the field, especially research engineers and academics. It deals mainly with the application of theories and mathematical solutions to problems. Articles tend to be lengthy. It would probably be used by our research engineer. Many of these are published by the professional associations as well as commercial publishers. One example is:

American Society of Civil Engineers. Proceedings 1873+

(b) Technical journal

Primarily aims at the practitioners of the field. The articles tend to deal with practical problems and are usually accompanied by photographs, and diagrams or illustrations. Articles are frequently about "How I did it" or "How things work". These journals occasionally contain advertisements and product announcements which tend to be low key. Although the level of the writing is primarily aimed at the development or working engineer, a reader with technical knowledge, such as home inventor might be able to understand some of the articles.

E.g. Machine Design.

(c) Trade or popular journal

Usually comes with attractive cover. Contains a great number of advertisements and many colour photographs of products. Articles tend to be short and written in simple language. It is intended for a general audience ranging from home hobbyists to the specialists who want to find out about events, new developments, products, services and personalities.

E.g. Popular Mechanics.

5.4 Indexing and abstracting services for engineering

Indexing and abstracting services list and often analyze the contents of a range of publications relating to a general area, such as Science and Technology or a specific area such as Engineering. The majority of the services list articles from periodicals but they may also include books, conference papers, reports, patents and AV materials. They are used for current awareness and also for retrospective searching on particular topics. Most can now be searched in machine readable format as well as in the hard copy versions.

5.4.1 General

These usually include journal articles only and are intended primarily for the non-specialist. The majority of journals indexed tend to be technical and trade or popular with some research journals.

Examples:

Applied Science and Technology Index (ASTI) (Laboratory) 1958+ . Monthly with annual cumulations. (Formerly Industrial Arts Index. 1913-1957). New York, H.W. Wilson Co.
Excludes medicine and agriculture. Each issue carries the names of the journals indexed which are 90% American and 10% British.
Strictly subject index only; standard subject headings are used and sub-divided in turn by form, topic and country. Once used to the format, it is easy to use.

British Technology Index (Laboratory). 1962+ . Monthly with annual cumulations. London, The Library Association.

Medical and agricultural journals are omitted although Agricultural Engineering and Medical Engineering are included. Entry is under specific subject headings "chained" together.

Example: Roads: Traffic: Signals: Left turn on red. Entry points can also be found if one looks under Traffic or Signals by means of cross-references.

It also provides an author index.

5.4.2 Specialized

Specialized indexing or abstracting journals treat the subject in greater depth by means of -

(a) indexing or abstracting more than just journals, they usually include reports, conference papers, books, patents and special publications.

(b) they include materials in foreign languages as well as English.

(c) the majority of the journals indexed or abstracted are of research and technical type with only a few titles of trade and popular type.

(d) they usually have a list of core journals which are indexed or abstracted cover-to-cover. These journals are usually of research and technical types while the trade and popular journals are indexed or abstracted selectively.

(e) they are aimed at specialists in the field.

Engineering Index V.1 -, 1884 - N.Y., Engineering Index, Inc.
Issued monthly, with annual cumulations.

This is a monthly abstracting service covering the world's significant technological literature and conferences encompassing all engineering and related disciplines. In spite of its title, it is really an abstracting service with short indicative or informative abstracts being given for each item included. It is issued monthly with annual cumulations. Entries are arranged within each issue under specific subject headings. There is a separate author index referring the user to the main subject arrangement.

Subject coverage includes all disciplines of engineering, technology and applied science, and transdisciplinary functions which involve research, development and testing, design and systems engineering, construction and maintenance, production sales and marketing, management, consulting and education.

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Types of resources abstracted include current serial and non-serial publications, including more than 3,500 regular professional and trade journals; proceedings, transactions and special publications of engineering societies, scientific and technical associations etc.; monographs, standards and selected books; some conference and symposia papers.

Coverage is truly international. As well as indexing journals from English speaking countries, there are many from U.S.S.R., Poland, Germany, France, India, Japan etc. Within the English titles there is a slight bias to U.S. coverage.

Arrangement. Entries are arranged alphabetically by subject under more than 12,000 specific subject headings, and sub-headings further divide them into more specific areas. These headings are chosen from the Ei authority list, Subject Headings for Engineering - S.H.E. Each entry is sequentially numbered with an Ei abstract number. 'See' and 'see also' references refer user to alternative entries and are very numerous.

The following is an example of some of the main subject headings and selected 'see' references from the Engineering Index Annual:-

INFORMATION STORAGE AND RETRIEVAL
INFORMATION THEORY
INFRARED DEVICES
INFRARED RADIATION
INGOT MOLDS
INLAND WATERWAYS
INSECT CONTROL
INSECTICIDES
INSPECTION
INSTRUMENTS
INSULATING MATERIALS
See Electric Insulating Materials; Heat Insulating Materials
INSULATING OIL
INSULATORS
See Electric Insulators
INTEGRATED CIRCUITS
INTERCONNECTED NETWORKS
See Electric Transmission - Interconnected
INTERFEROMETERS
INTERNAL COMBUSTION ENGINES
INTERPLANETARY FLIGHT
See Space Flight - Interplanetary
INVENTORY CONTROL
IODINE
ION BEAMS
ION EXCHANGERS
ION PROPULSION
See Rocket Engines - Ion Propulsion
ION SOURCES
IONIZATION
IONIZATION CHAMBERS
IONOSPHERE
IONS
IRIDIUM
IRIDIUM AND ALLOYS
IRIDIUM COMPOUNDS
IRIDIUM RHODIUM ALLOYS
IRON

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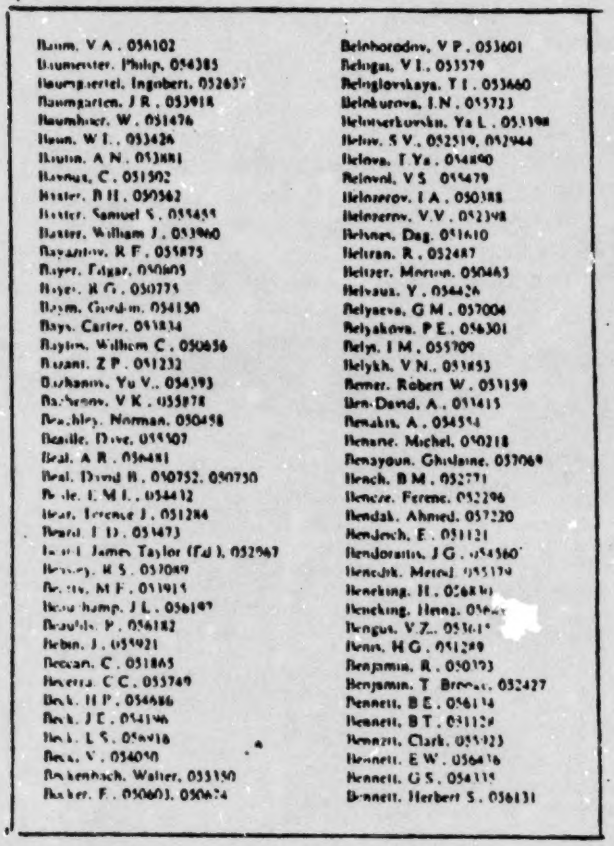
Access to information in each monthly issue is also through an alphabetical list of authors appearing in that issue, giving the appropriate Ei abstract number in the main subject arrangement.

The following is an example from the monthly author index:-



Baum, V A . 056102
Baumeister, Philip, 056385
Baumgaertel, Ingobert, 032637
Baumgarten, J R . 053918
Baumhauer, W . 051476
Baun, W L . 053426
Baunin, A N . 053881
Bavaud, C . 051502
Baxter, B H . 050562
Baxter, Samuel S . 055455
Baxter, William J . 053960
Bayanov, R F . 055875
Bayer, Edgar, 050605
Bayer, R G . 050775
Baym, Gershon, 054150
Bays, Carter, 051834
Bayton, William C . 050656
Bazant, Z P . 051232
Bazhanov, Yu V., 054393
Bazhenov, V K . 055878
Beachley, Norman, 050458
Beadle, Dave, 055507
Beal, A R . 056481
Beal, David B . 050752, 050750
Beale, I M L . 054412
Bear, Terence J . 051284
Beard, I D . 053473
Beard, James Taylor (Ed.), 052967
Beasley, R S . 057049
Beatty, M F . 051915
Beauchamp, J L . 056189
Beaudin, P . 056182
Bebin, J . 055921
Beccari, C . 051865
Becerra, C C . 055749
Beck, H P . 054686
Beck, J E . 054196
Beck, L S . 056918
Beck, V . 054050
Beckenbach, Walter, 053350
Becker, F . 050603, 050624
Belchorodov, V P . 053601
Belegu, V I . 053579
Beloglovskaya, T I . 053660
Belokurova, I N . 055723
Belousovskaya, Ya L . 053198
Belov, S V . 052519, 052944
Belova, T Ya . 054890
Belovol, V S 054479
Belozerov, I A . 050388
Belozerov, V V . 052398
Belsnes, Dag, 051610
Beltran, R . 052687
Beltzer, Morton, 050463
Belvaux, Y . 054424
Belyaeva, G M . 057004
Belyakova, P E . 054301
Belyi, I M . 055709
Belykh, V N., 053853
Bemer, Robert W . 053159
Ben-David, A . 051415
Benakis, A . 054554
Benarie, Michel, 050218
Benayoun, Ghislaine, 057069
Bench, B M . 052771
Benczur, Ferenc, 052296
Bendak, Ahmed, 057220
Bendisch, E . 051121
Bendorattis, J G . 054560
Benedik, Metod 055179
Benecking, H . 056836
Benecking, Heinz, 056
Bengus, V Z., 053619
Benes, H G . 051249
Benjamin, R . 050193
Benjamin, T Brooke, 032427
Bennett, B E . 056134
Bennett, B T . 051129
Bennett, Clark, 055923
Bennett, E W . 056416
Bennett, G S . 054335
Bennett, Herbert S . 056131

In the Engineering Index Annual the abstracts are indexed under alphabetically arranged main headings and sub-headings. Each abstract is arranged in ascending numerical order of its Ei abstract number only under subject headings and sub-headings for which there is more than one entry; otherwise they are in random numerical order. The author index follows the subject index in the last volume.

Scope of individual abstract. Titles and abstracts are in English. In the monthly issue there is the Ei abstract number, title of paper, informative abstract, number of references cited in the paper (and their language if not English); author's name and affiliation; title, volume, issue, date and pages of source journal.

The following example entry identifies the elements and their location in a typical abstract:-

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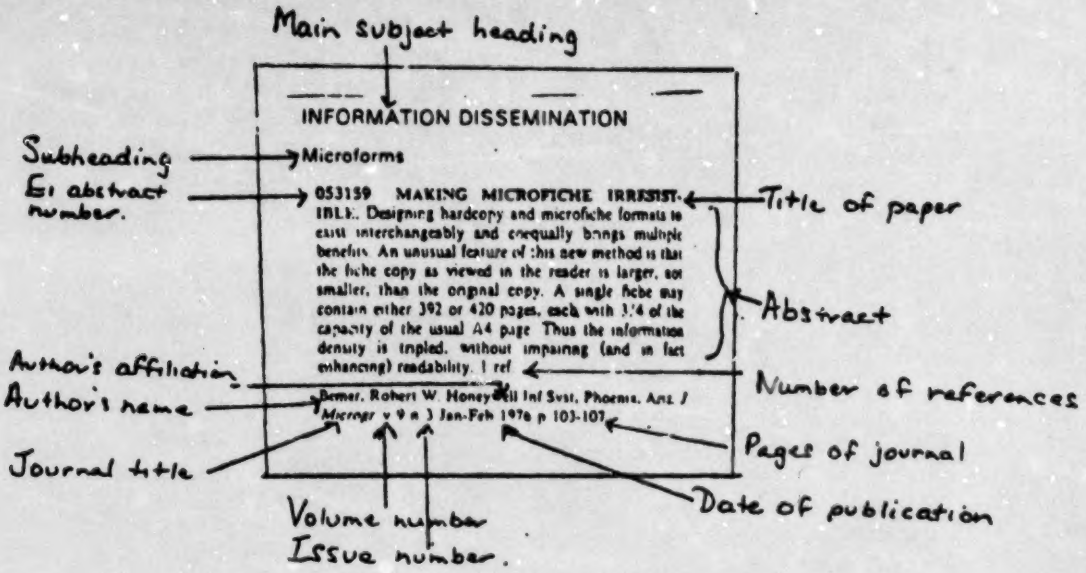
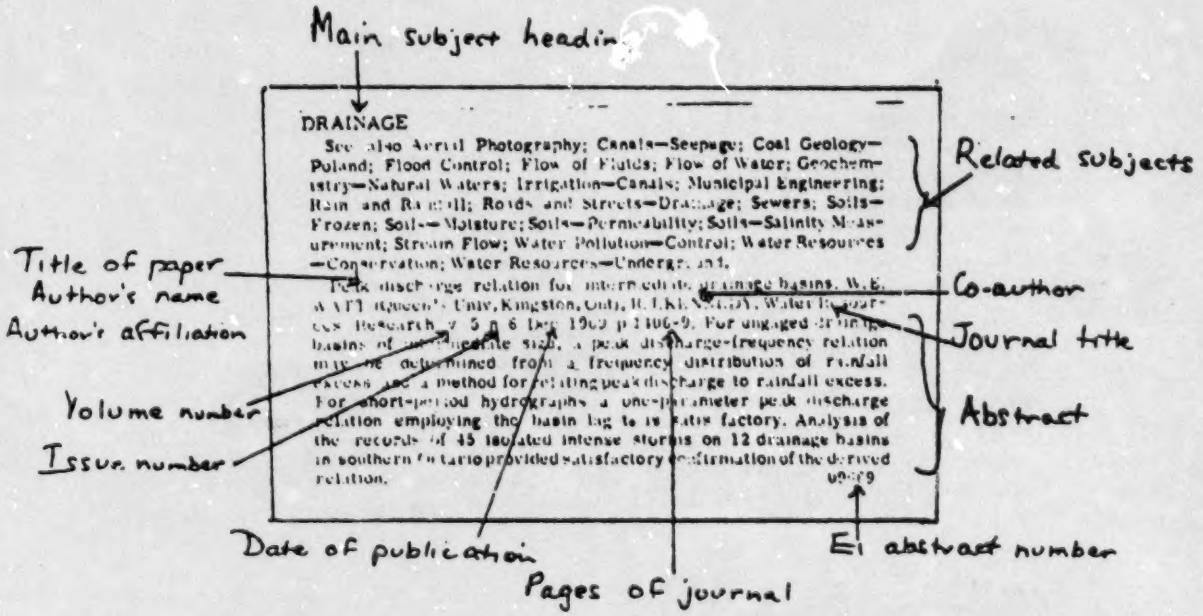

Main subject heading
INFORMATION DISSEMINATION
Subheading
Microforms
EI abstract number.
053139 MAKING MICROFICHE IRRESISTIBLE. Designing hardcopy and microfiche formats to exist interchangeably and coequally brings multiple benefits. An unusual feature of this new method is that the fiche copy as viewed in the reader is larger, not smaller, than the original copy. A single fiche may contain either 392 or 420 pages, each with 1/4 of the capacity of the usual A4 page. Thus the information density is tripled, without impairing (and in fact enhancing) readability. 1 ref
Title of paper
Abstract
Author's affiliation
Author's name
Journal title
Volume number
Issue number.
Number of references
Pages of journal
Date of publication

In the annual volume the arrangement of the elements in the individual abstract is slightly different and the following example illustrates this:-


Main subject heading
DRAINAGE
See also Aerial Photography; Canals—Seepage; Coal Geology—Poland; Flood Control; Flow of Fluids; Flow of Water; Geochemistry—Natural Waters; Irrigation—Canals; Municipal Engineering; Rain and Rainfall; Roads and Streets—Drainage; Sewers; Soils—Frozen; Soil—Moisture; Soils—Permeability; Soils—Salinity Measurement; Stream Flow; Water Pollution—Control; Water Resources—Conservation; Water Resources—Underg...
Related subjects
Title of paper
Author's name
Author's affiliation
Co-author
Journal title
Volume number
Issue number
Abstract
Date of publication
Pages of journal
EI abstract number

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Use. The monthly issues may be used for the latest, current information in the field. To find an item, look under terms which best describe the particular subject of interest. For example, "Conveyors" is a subject heading and the term may be used as a search term. If the term selected by the user does not coincide exactly with those chosen by Ei, then the user must select synonymous terms. If you know the author of an article, consult the author index. The number following an author's name here is the Ei abstract number in the main subject arrangement.

Aids to Use. Each monthly issue provides a guide for using the Engineering Index, with details of its arrangement, methods of locating an item of interest, and example entry.

There is no list of abbreviations of publications indexed; or scientific and engineering abbreviations used in the monthly issues. To obtain these abbreviations you must consult Volume 1 of the Engineering Index Annual. In this volume of the annual you will also find a list of the main subject headings and Publications Indexed for Engineering - P.I.E. The latter list gives full publication title, abbreviated title, and code indicating depth of coverage.

Types of Use. The Engineering Index provides a current source of information to all levels of users of engineering and related technology. It is an essential tool for latest developments in the subject area. Ideal for engineers, scientists, research workers and post-graduate students. The Engineering Index Annual may be used for retrospective searching in the subject field, to obtain all references to a particular subject area.

There are many abstracting services for specific aspects or branches of engineering.

International Aerospace Abstracts. 1961+ . Semi-monthly with annual indexes. N.Y., Technical Information Service Branch, National Aeronautics and Space Administration (NASA).

This is a highly specialized abstracting journal. It has a world wide coverage of journals, reports, patents, conference papers and books in the field of aeronautics and space science and technology. The abstracts are arranged in 74 subject categories. Each abstract has an accession number. It provides five different indexes: subject, author, contract number, report number and accession number. An unusual feature of the subject index is that a brief description of the content of the item is given under the subject heading. Each item appears under several subject headings, thus giving multiple access to the subject content of the item.

Electrical and Electronics Abstracts (EEA). 1898+ . Monthly with half-yearly indexes. London, INSPEC.

INSPEC stands for "International Information Services for the Physics and Engineering Communities". It is an information division of the Institution of Electrical Engineers (IEE). INSPEC was established to co-operate with other learned societies both in the U.K. and overseas to build a range of information services which covers the whole field of physics, electrical engineering and electronics, computers and

control engineering and serves a truly international user community. IEE published "Science Abstracts" (Vol. 1, 1898). When INSPEC took over in 1969, "Science Abstracts" was split into three publications:

Physics Abstracts
Electrical and Electronics Abstracts
Computer and Control Abstracts

INSPEC also offers "Current Papers" of these three abstracts designed for current awareness. "Current Papers" contain titles and bibliographic details only and they are about two to three months in advance of the full abstracts.

EEA covers world wide literature within its scope. It has a list of about 1,000 journals which are abstracted cover-to-cover, other materials abstracted selectively are related journals, patents, conference papers, reports and books. Each abstract is simply given a running number, and entries are arranged by means of a subject classification scheme which consists of main sections subdivided into subject groups, each of which is split into sub-sections. Cumulative author and subject index appear every six months to serve the monthly issues, thus making searching easier.

5.5 Directories

As mentioned earlier, engineers often obtain their information and keep themselves up-to-date through informal channels, such as acquaintances or colleagues, professional institutions or attending conferences. Publications listed below are samples of the kind of publication that you can use to find information such as:

- engineering consulting firms
- details of conferences
- names of research engineers that often are available as consultants
- details of professional organizations.

Australian scientific societies and professional associations. 2nd ed. Melbourne, CSIRO, 1978.	R506.94 CRIM
Directory of engineering societies and related organizations, 1976. N.Y., Engineers Joint Council	R620.0025 DIRE
Directory of Australian associations 1978-1979 1st ed. Edited by B. Chan. Auckland, Australasia Reference Research Pub. Ltd., 1978.	068.94 DIRE
Engineering consultant firms in the Asian and Pacific region. Canberra, Registry of Scientific and Technical Services, 1973.	
Directory of technical information sources for industry. Canberra, NLA, 1978. (NLA - Network Study Series No. 1).	

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Scientific and technical research centres in Australia. Edited by Ian Crump. Melbourne, C.S.I.R.O. 1975. R507.2094 SCI 1

Scientific meetings: describing future meetings of technical, scientific, medical and management organizations and universities. Powey, Calif., Scientific Meetings Publications. R506.02505 SCIE

5.6 Trade Literature

Trade literature can be loosely described as books and pamphlets issued by a manufacturer or a dealer, or by a group of manufacturers illustrating and describing their products, goods or services and sometimes including, or accompanied by, a price list. Trade literature is also known as trade catalogues or products information. There are several kinds of trade literature. Trade journals have been already mentioned. Trade literature can be categorized by its purpose.

(a) Materials whose emphasis is to promote products, goods, or services. They are usually well presented with glossy colour photographs and minimum amount of factual information.

E.g. A catalogue of electronic equipment.

(b) Materials whose aim is simply to supply factual information about the products, goods or services.

E.g. B.H.P. Engineering Steels
Melbourne, B.H.P. Pty. Ltd., 1974.

This latter category may not contain any glossy photographs or advertisements, but lists B.H.P.'s steel dimensions and properties.

The level of information content of trade literature varies. Some would contain high level of factual technical information and some would contain none at all. These are the types of information that one is likely to seek when using trade literature:

(a) product information

- description
- illustration, photograph or drawing
- dimensions
- performance

(b) manufacturer information

- where to get the products
- whom to contact etc.

(c) price - sometimes price is included but not always.

If you are running a special library attached to a commercial firm, you probably need to keep at least a small working collection of trade literature. These points are worth bearing in mind about its collection and management:

(a) it becomes out-of-date very quickly

(b) it is commonly undated and its currency cannot easily be determined without reference back to the manufacturer concerned.

(c) the technical information content is often extremely low.

(d) cost or price information is often not included.

(e) no standardized format and layout. It could come in the shape of the telephone directory or simply a single sheet pamphlet. This makes storage and retrieval difficult.

(f) because trade literature usually is free, acquisition tends to be haphazard and cannot easily be controlled.

There are commercially available sets of trade literature which are updated continually.

Australian Electronics Data System. Melbourne, Technical Indexes Pty. Ltd.

Presents on microfiche technical literature from overseas and Australian manufacturers.

Australian Engineering Index. Melbourne, Technical Indexes Pty. Ltd.

Consists of loose-leaf binders containing trade catalogues, data sheets and price lists on engineering materials, components and equipment.

Suppliers Index. Sydney, Suppliers Index (Aust.) Pty. Ltd.

Consists of looseleaf binders containing trade catalogues and pamphlets concerning all aspects of the building industry.

5.7 Standards

A general definition of standardization is the establishment, by authority, by custom or by general consent, of rules, disciplines, techniques and other defined conditions which have to be followed to enable a society or particular sections of it to function smoothly and efficiently. Standards have evolved whenever repetitive operations have been developed onto organized procedures. In fact, mass production is impossible without standardization.

Engineers are usually concerned only with industrial standards which can be national (e.g. Australian standards) or international (e.g. International Electrotechnical Commission Standards).

Industrial standards can be conveniently divided into:

(a) Dimensional standards specify the dimensions needed to achieve interchangeability.

(b) Standards of performance or quality will ensure that a product is adequate for its intended purpose.

(c) Standards of testing enable materials and products intended for the same purpose to be compared.

(d) Terminology standards enable engineers within a particular industry to communicate more exactly.

(e) Code of practice is a special type of standards for engineering processes or procedures, such as installation and maintenance of equipment.

Some organizations issuing standards are:

Australia: Standard Association of Australia (SAA). SAA issues standards with "AS" prefix. Then standards are listed in Annual list of SAA publications.

United Kingdom: British Standards Institution (BSI). It issues standards with "BS" prefix and codes of practice with "CP" prefix. These standards and codes of practice are listed in BSI Yearbook.

United States: The Americans do not have a single body that issues their national standards. Their standards are a collection of standards issued by different authorities, associations, societies or institutions. For example, American Society for Testing and Materials (ASTM) issues ASTM standards for materials testing.

Germany — Deutches Institut für Normung issues standards with "DIN" prefix.

International Standards

Two major organizations exist to promote and develop international standards.

International Organization for Standization (ISD) based in Geneva.

International Electrotechnical Commission (IEC) also based in Geneva.

5.8 Patents

A very substantial portion of engineering designs, methods and processes, used in the past and today, are described in patent specifications. this is true, in particular, regarding significant modern developments. Therefore, patent specifications are an important source of information for the engineer engaged in research and development. However, obtaining patents is one of the most difficult information tasks. The task often starts with verification of the patent, i.e. when the patent was filed, who filed the patent, when it was accepted, to whom it was granted, and countries where the patent was filed, etc. Once the patent has been verified, the next problem is where to go to obtain the patent. Most patents can be bought directly from the patent office of the country of origin. The Australian Patent Office also stocks patents from major countries of the world.

5.9 Technical Reports

The technical report is an important means used by engineers to communicate the results of their development and design activities. The main difficulty with a technical report is its accessibility. Most technical reports are produced for limited distribution only: mainly within a company or to selected individuals outside the company. Often the company wants to keep the content of the reports confidential. The accessibility of technical reports is a nightmare for information workers because they are difficult to locate.

The following publications are attempts to control the existence of reports.

Australia. Australian Technical Reports (AUSTRE). Published by the National Library of Australia. It is still in its infancy as a comprehensive Australian technical reports bibliographic tool. It started in 1978 and still in the development stage.

U.S.A. Government Reports Announcement and Index 1964+ . Semi-monthly. Original to control reports issued by U.S. Government departments and agencies. Now it covers everything and anything that in one way or another have something to do with the U.S. Government.

e.g. A translation of a Russian fiction novel done by the C.I.A.

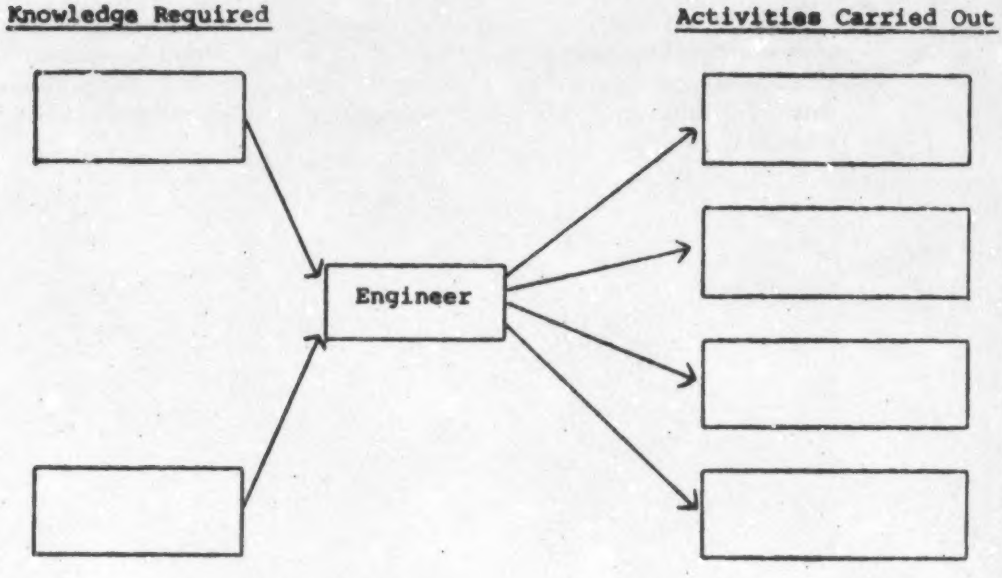
Other sources

Other sources used by engineers are maps, plans and specifications. These graphic forms supply information appropriate to particular needs. Books have not been mentioned in this guide. They synthesize and summarize information, but are less used in this subject area than in others.

6. STUDY QUESTIONS AND EXERCISES

1. From quotations on page 232, and the use of dictionaries, list three essential characteristics of "Engineering".

2. The following is a diagrammatic representation of Engineering. Can you suggest the components of the diagram?



There are many branches of engineering - civil engineering and electrical engineering are two of them. The overriding purpose of engineering is to produce a functional piece of equipment. The branches of engineering correspond to different types of products. Each branch therefore has different concerns and methodology.

3. List at least six other branches of engineering. Define each one briefly (no more than ten words) or list at least one type of output or product, e.g. civil engineering - bridges. Some of the sources listed on page 237 may be useful. Compare and contrast two sources in terms of their appropriateness in answering this question.

4. For each category of engineer, research, development, design and consulting, list in order of priority the information channels you think would be most heavily used. Give reasons for your answer. List the advantages and disadvantages of each channel.

5. Locate three definitions of filter. Evaluate the answer found in terms of:

   (a) length
   (b) simplicity

   Evaluate the sources used in terms of ease of use, including arrangement.

6. Answer the following questions, wherever possible validating the answer in another source.

   (a) Locate an illustration of the method of erection used for the Sydney Harbour Bridge.

   (b) What happened to the Tacoma Bridge in 1941?

   (c) How does a ball point work and why is it frequently called a biro?

6. (d) The Australian Government is thinking about replacing the aging Mirage fighters with the McDonnell-Douglas F-15 Eagle. Where can I get a colour photograph of this aircraft and other technical information about it?

(e) Can I take my "woofer" for a walk or let my "tweeter" fly?

(f) Aerosol spray cans are said to have harmful environmental effects in thinning earth's OZONE layer which protects us from excessive radiation. Who filed the first patent for the Aerosol can and when? How high above the earth is the OZONE concentration at its maximum?

(g) How many submarines are in the Australian Navy? What are their names and what is their speed and range?

7. Choose three engineering journals. Carefully examine and inspect these journals, and comment on the features which differentiate between them. How could you classify them according to the three types of journal discussed above? Hints: compare the publishers; compare the physical formats; compare the types of articles contained.

8. Use Current Australian serials or Ulrichs to locate three engineering journals published in Australia, one for each of the journal categories discussed earlier.

9. (a) Choose an issue of Engineering Index.

(b) Describe the scope of Engineering Index referring to subject areas, language and country, and type of materials abstracted.

(c) How often is the index published?

(d) How up-to-date is it?

(e) What is the arrangement and indexing method of Engineering Index?

(f) For what kinds of use is this arrangement most suitable?

(g) The title of the article appears first. How useful is this particular arrangement? What is the disadvantage?

(h) Locate an article by J. Hunt. What is its title and date of publication? Are there any references cited?

(i) Find an article on digital computer systems.

(i) In what journal was the article published?
(ii) When was it published?
(iii) What is the Ei abstract number of the entry?
(iv) Who wrote the article?
(v) What subject entry did you use?

(j) What additional subject headings might be useful in the above question?

10. Answer the following questions using directories:

(a) Who is P.T. Fink? What branch of engineering is he involved in? Did he publish anything in 1978?

What position is he currently holding?

(b) What is the Wright Brothers' claim to fame?

(c) Which Australian company can I consult about industrial transmission equipment problems?

11. Choose three samples of trade literature. Evaluate these in terms of

(a) authority
(b) accuracy
(c) scope

12. Choose one of the Australian standards in the laboratory. In which of the categories (a)-(e) on page 250 does it belong? Who would use these standards and why?

13. What types of engineering resources would you collect for

(a) a public library in Port Kembla
(b) a public library in the southern suburbs of Sydney
(c) the B.H.P. library

Give the reasons for your decision in each case.